Received(Date): Thu, 10 Jun 2010 11:48:07 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: Mikulski trip to Gulf + new letter
To: "Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"david.kennedy@noaa.gov" <David.Kennedy@noaa.gov>,"Dave Westerholm (Dave.Westerholm@noaa.gov)" <Dave.Westerholm@noaa.gov>,Sally Yozell <Sally.Yozell@noaa.gov>,"'John.Gray@noaa.gov'" <John.Gray@noaa.gov>,Amanda Hallberg Greenwell <Amanda.Hallberg@noaa.gov>,"Jen Pizza (Jen.Pizza@noaa.gov)" <Jen.Pizza@noaa.gov>,"William Conner (william.conner@noaa.gov)" <William.Conner@noaa.gov>,"'lrobinson@noaa.gov'" <Larry.Robinson1@noaa.gov>,John Oliver <John.Oliver@noaa.gov>
Cc: "steven.gallagher@noaa.gov" <Steven.Gallagher@noaa.gov>,"Kimball, Kevin A." <kevin.kimball@nist.gov>, "Sarri, Kristen" <KSarri@doc.gov>
20100610102517403.pdf

Note below – assume NOAA in field is prepared for the Mikulski codel on these topics? Just heads up.

Also just got a letter in from a number of Senators - including Mikulski – requesting NOAA to do long term projections for east coast.

See attached.

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Thursday, June 10, 2010 10:14 AM
To: 'Ellis.Heidi@epamail.epa.gov'; 'Ganesan.Arvin@epamail.epa.gov'; 'margaret.spring@noaa.gov'; 'Kreischer, Jon'; 'Wittkamp, Carol MVN'; 'Salt, Terrence C SES CIV USA ASA CW'; 'Lee, Let Mon Mr CIV USA ASA CW'; 'Kristi_Watkins@fws.gov'
Cc: Albritton, Jason (EPW); Rafle, Peter (EPW); Poirier, Bettina (EPW)
Subject: CODEL policy issues

I wanted everyone to know that these are the issues that have been raised by the senators and staff who will be on the CODEL tomorrow. Can you please relay them to your agency's representatives who will be briefing/touring with the delegation? Thanks.

EPA: water quality impacted by oil and dispersants, air quality/environmental testing, dispersant toxicity

NOAA: spill assessment and modeling, wildlife and natural resources impacts of the oil spill

Corps of Engineers: barrier island issues, navigation/flood protection impacts of spill, coastal restoration plan

Fish and Wildlife Service: wildlife and natural resource impacts of the spill, habitat restoration

Coast Guard: Spill mitigation, incident management

Thanks for your assistance.

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX

P Please consider the environment before printing this e-mail

United States Senate

WASHINGTON, DC 20510

June 10, 2010

Admiral Thad W. Allen
Commandant
United States Coast Guard
2100 Second Street, SW
Washington, DC 20593

The Honorable Janet Napolitano
Secretary
United States Department of Homeland Security
Washington, DC 20528

The Honorable Gary Locke
Secretary
United States Department of Commerce
1401 Constitution Avenue NW
Washington, DC 20230

Dear Admiral Allen, Secretary Napolitano, and Secretary Locke:

As United States Senators representing coastal states along the Atlantic seaboard, we are keeping close watch on the oil spill in the Gulf of Mexico, not only so we can help the residents of that region, but also to assess whether the oil and chemical dispersants might affect the beaches and fisheries in our home states. Some widely-viewed but unofficial projections indicate that parts of the spill could get caught in the Loop Current, which would bring the oil up along the East Coast. This outcome is less than a certainty – it may even be highly unlikely. Nevertheless, we have spoken with residents in our coastal communities who are concerned about the oil and chemical dispersants, and these communities should at the very least be fully prepared for the worst case scenario.

To this end, we want the federal government to proactively work to ensure coastal states along the Atlantic seaboard are prepared and to ensure that the public and local governments are given the best science-based information about where the spill might be headed. Specifically, we have two requests:

- We ask that the Department of Homeland Security immediately begin coordinating with all state emergency preparedness agencies along the Atlantic Coast, providing full information about how best to prepare for managing an oil spill and ensuring that these states are properly equipped for the worst-case scenario.

- We ask that the National Oceanic and Atmospheric Administration begin developing and disseminating official, science-based predictions about the long-term direction of the oil spill and chemical dispersants, that NOAA make frequent updates to these projections

Document ID: 0.7.19.2153.1

and that they be publicly available. We appreciate the current projections NOAA develops and posts on its website, but these estimates are limited to a 72-hour period. We fully understand that projecting the spill's direction weeks or months in advance is extremely difficult, but it would be helpful to know the statistical probabilities of oil hitting various Atlantic Coast locations.

Our states' beaches are fully open for the summer season, and at this time, the oil spill does not pose an imminent threat to them. However, the health of our shores is too important to be left to chance – not only are they natural treasures, but they are also how many families in our coastal communities earn a living. They add billions of dollars to our states' economies, support millions of jobs and bring enjoyment to millions more families from nearby and across the nation. If there is any real risk to these communities from a spill that right now remains thousands of miles away, we need to know as soon as possible. Furthermore, our state agencies that will partner with federal agencies to protect our shores need to be fully prepared with the information and equipment needed to combat the worst case scenario. Such an effort should begin immediately. Thank you for your hard work to protect the Gulf Coast, and we look forward to collaborating with you.

Sincerely,

ROBERT MENENDEZ
United States Senator

BARBARA MIKULSKI
United States Senator

KIRSTEN E. GILLIBRAND
United States Senator

JIM WEBB
United States Senator

RICHARD BURR
United States Senator

CHARLES SCHUMER
United States Senator

TED KAUFMAN
United States Senator

SAXBY CHAMBLISS
United States Senator

Document ID: 0.7.19.2153.1

SCOTT BROWN
United States Senator

MARK WARNER
United States Senator

JOHNNY ISAKSON
United States Senator

JEANNE SHAHEEN
United States Senator

JOHN F. KERRY
United States Senator

SHELDON WHITEHOUSE
United States Senator

TOM CARPER
United States Senator

FRANK LAUTENBERG
United States Senator

CHRISTOPHER J. DODD
United States Senator

SUSAN COLLINS
United States Senator

KAY HAGAN
United States Senator

JACK REED
United States Senator

OLYMPIA SNOWE
United States Senator

BENJAMIN CARDIN
United States Senator

Document ID: 0.7.19.2153.1

Received(Date): Fri, 11 Jun 2010 03:32:08 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update June 10

Gulf of Mexico Oil Spill Response Update

06/10/2010 – 6:00pm EDT

BP is working as part of the Unified Command to accomplish three main objectives in the Gulf of Mexico:

1. On the Sea Floor to stop the flow of oil through various strategies;

2. On the Surface to minimize impacts of the spill; and

3. Onshore to protect the shoreline and inform the public.

Regional Highlights

ξ 15,816 barrels of oil captured by the Lower Marine Riser Package Cap on June 9.

ξ BP will make $75 million in additional grants to states for advance funding of shoreline protection.

ξ 17 controlled burns conducted since Tuesday bringing total estimate to 91,712 barrels consumed to date.

ξ 29,640 safety and hazardous material handling training modules completed.

ξ 4,067 vessels active, an increase of 482 since Tuesday.

ξ 18.1 million gallons of oil-water mix has been collected and treated.

Offshore – Sea Floor

BP's priority is to reduce and stop the flow of oil subsea and minimize environmental

impacts through multiple strategies:

Containment Recovery – Lower Marine Riser Package (LMRP) Cap

Operations Summary: 15,816 barrels of oil were captured through the LMRP cap during the past 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.*

- Q4000 Direct Connect: the hoses and manifold that were deployed for the "top kill" operation will take oil directly from the blowout preventer through a separate riser to the Q4000 vessel on the surface. This system, expected to be available for deployment in mid-June, is intended to increase the overall efficiency of the containment operation by increasing the amount of oil and gas flow that can be captured from the well.

- Long-term Containment Option: this operation will take oil from the LMRP via a manifold to a new free-standing riser that will end approximately 300 feet below sea level. A flexible hose will attach it to a containment vessel at surface. This option is designed to more effectively disconnect and reconnect the riser to provide the greatest flexibility for operation during a hurricane. Implementation is expected in late June or early July.

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, with approximately 12,000 gallons applied on June 9. EPA is allowing subsea application of the currently-used dispersant to continue. 529,000 gallons is in inventory for subsea use.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement down the hole. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) has passed 12,000 feet below sea level and is still drilling. This well was "spudded" on May 2.

- The second relief well (work being performed by *Development Driller II*) is at approximately 8,600 feet below sea level. Drilling began on May 16.

Offshore – Surface Spill Response

Cleanup Vessels – 4,067 vessels are deployed, including tugs, barges and recovery boats, an increase of 482 over the prior 24 hours.

Skimming Vessels – 138 of the cleanup boats are skimmers, designed to separate oil from water. Approximately 18.1 million gallons of oil-water mix have been recovered and treated.

Surface Dispersant – An additional 2,100 gallons of dispersant was applied on the surface yesterday. 230,000 gallons is in inventory for surface use.

In-Situ Burning – The Unified Command conducted an additional 17 in-situ burns on Wednesday. It is estimated that 91,700 barrels of oil have been burned.

Spill Response Technology and Offers of Services or Products –

- BP has received more than 20,000 ideas on how to stop the flow of oil or contain the oil spill since the Gulf of Mexico incident began. To submit alternative response technology, services or products, call (281) 366-5511. Each caller to the Houston suggestion line will have their details entered into the Horizon Call Center database. The database will then send the caller a simple form, termed either the Alternative Response Technologies form, or the Products and Services Form, for them to set out the details of their idea. The forms are available online at: www.horizonedocs.com. After the caller completes and submits the form, it is sent for review by a team of 30 technical and operational personnel who will review its technical feasibility and application. Given the quantity of the proposals and the detail in which the team investigates each idea, the technical review can take some time.

- The U.S. Government has also issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil

wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That announcement can be found online at: https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore - Shoreline Protection and Community Outreach

BP Provides $75 million in Additional Grants to States – Today BP announced it is providing the states of Alabama, Mississippi and Florida with an additional $25 million each to continue implementation of the states' Area Contingency Plans. These are in addition to the previous grants that BP announced on May 5 to accelerate the implementation of Area Contingency Plans, and in addition to the tourism grants announced on May 17.

Louisiana Barrier Island Project Funding – BP has deposited $360 million into escrow to fund construction of six sections of the Louisiana Barrier Islands Proposal.

Wildlife Fund Established – BP has established a new wildlife fund to create, restore, improve and protect wildlife habitat along the coastline of Louisiana, Mississippi, Alabama, and Florida. The creation of this fund is over and above BP's obligations under the Oil Pollution Act of 1990. BP will direct all net revenue from the saleable oil recovered from the MC252 into the fund. Net revenue is BP's share of the proceeds after federal royalties, taxes, and other interest owners have been paid.

Boom Report – 2.36 million feet of containment boom have been deployed (with an additional 633,000 feet being staged). 2.76 million feet of sorbent boom have been deployed (with an additional 2.29 million feet available or being staged.)

Claims

More than $55.5 million has been paid to claimants. 500 claims adjusters are operating across the Gulf Coast and 125 operators are taking calls.

- BP announced on Sunday it will pay a second round of advance payments to existing claimants during the month of June. This is to compensate businesses and individuals for loss of income and loss of wages caused by the spill.

- BP has 31 claims offices open to help claimants through the process. Vietnamese and Spanish translators are in some offices. *Note:* No person asserting a claim or receiving payment for interim benefits will be asked or required to sign a release or waive any rights to assert additional claims, to file an individual legal action, or to participate in other legal actions associated with the Deepwater Horizon incident.

- The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: http://www.bp.com/iframe.do?categoryId=9033722&contentId=7062138

Independent Claims Mediator Established – BP is appointing an Independent Mediator to ensure a fair claims process for people affected by the spill. BP will pay legitimate, substantiated claims for loss and damage caused by the spill, and is committed to paying claims promptly. In those cases where a claimant disagrees with the outcome of the process, the mediator will provide a way for them to get an independent review.

Total Cost – The cost of the response to date has exceeded $1.25 billion, including the cost of the spill response, containment, relief well drilling, grants to states, claims paid, and federal costs submitted so far.

$500 Million for 10-year Gulf Research Initiative to Study Spill Impacts – BP is contributing $500 million over 10 years to fund an open research program studying the impact of the Deepwater Horizon incident, and its associated response, on the marine and shoreline environment of the Gulf of Mexico.

BP Provides $70 million in Tourism Grants to States – On May 17, BP made $70 million available to Louisiana, Mississippi, Alabama and Florida to promote tourism.

Volunteers and Training – 21,907 volunteers were signed up, trained, and working on Wednesday. Volunteers are being trained in five different modules that range from safety for beach clean-up, to wildlife monitoring, handling of hazardous materials and

vessel operation for laying boom. As of today, more than 29,000 training courses have been completed by those working on the incident. Information about training can be found on the incident website at www.deepwaterhorizonresponse.com under "volunteers."

State Specific Websites – These websites are designed to provide state-specific oil spill information to residents of communities affected by the Deepwater Horizon oil spill. Residents are encouraged to visit these sites frequently and sign up for the mailing list to receive the most current information about the spill response. These sites are dedicated to providing information about activities and events most important to residents of each state.

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

Onshore – Regional Operations and Outreach

Staging Areas – 17 staging areas are being utilized for rapid deployment to protect sensitive shorelines.

- Dauphin Island, AL
- Orange Beach, AL
- Theodore, AL
- Panama City, FL
- Pensacola, FL
- Port St. Joe, FL

- St. Marks, FL
- Amelia, LA
- Cocodrie, LA
- Grand Isle, LA
- Shell Beach, LA
- Slidell, LA
- St. Mary, LA
- Venice, LA
- Biloxi, MS
- Pascagoula, MS
- Pass Christian, MS

Claims Offices – 31 Claims offices have been established by BP across the Gulf Coast to provide locations where people can go to file or discuss claims. There are more than 500 claims adjusters staffing the offices.

Louisiana (13 locations) –

- Belle Chasse/Gretna

2766 Belle Chasse Hwy

Belle Chasse, LA 70037

- Chauvin (Terrebonne Parish)

5703 Hwy 56

Chauvin, LA 70344

ξ Cut Off (Lafourche Parish)

Tarpon Heights Shopping Center

Unit 2

16263 E. Main Street

Cut Off, LA 70345

ξ Grand Isle (Jefferson Parish)

3811 LA 1 (Community Center)

Grand Isle, LA 70358

ξ Houma (Terrebonne Parish)

Plaza Caillou Shopping Center

814 Grand Caillou Road

Suite 2 & 3

Houma, LA 70363

ξ Lafitte (Jefferson Parish)

2654 Jean Lafitte Blvd

Town Hall

Lafitte, LA 70067

ξ Morgan City (St. Mary Parish)

931 US Hwy 90 East

Bayou Vista, LA 70380

ξ New Orleans East (Orleans Parish)

4375 Michoud Blvd

New Orleans, LA 70461

ξ New Iberia (Iberia Parish)

956 S. Lewis Street

New Iberia, LA 70560

ξ Slidell (St. Tammany Parish)

2040 Gause Blvd., Suite 10

Slidell, LA 70461

ξ St. Bernard (St. Bernard Parish)

1345 Bayou Rd

Saint Bernard, LA 70085

ξ Venice/Boothville (Plaquemines Parish)

41093 Hwy LA 23

Boothville, LA 70038

ξ Westwego (Jefferson Parish)

1280 Westbank Expressway

Westwego, LA 77094

Mississippi (3 locations) –

- Bay St. Louis (Hancock County)

1171 Highway 90

Bay St. Louis, MS 39520

- Biloxi

920 Cedar Lake Rd, Suite K

Biloxi, MS 39532

- Pascagoula

5912 Old Mobile Hwy

Suite 3

Pascagoula, MS 39581

Alabama (5 locations) –

- Bayou LaBatre

13290 N. Wintzell Avenue

Bayou LaBatre, AL 36509

- Dauphin Island (Mobile County)

1008 Alabama Avenue

Dauphin Island, AL 36528

- Foley (Orange Beach/Gulf Shores/Bon Secour)

1506 North McKenzie Street (HWY 59)

Suite 104

Foley, AL 36535

- Gulf Shores / Orange Beach (Baldwin County)

24039 Perdido Beach Blvd

Suite 1

Orange Beach, AL 36561

- Mobile (Mobile County)

325 East I-65 Service Rd S

Suite 1

Mobile, AL 36606

Florida (10 locations) –

- Apalachicola (Franklin County)

194 14th Street

Suite 105

Apalachicola, FL 32320

- Crawfordville (Wakulla County)

3010 Crawfordville Hwy

Suite A&B

Crawfordville, FL 32327

- Ft. Walton Beach (Okaloosa County)

348 SW Miracle Strip Pkwy

Suite 13

Fort Walton Beach, FL 32548

- Gulf Breeze (Santa Rosa County)

5668 Gulf Breeze Pkwy

Unit B-9

Gulf Breeze, FL 32563

- Marathon (Monroe County)

7885 Overseas Hwy

Marathon, FL 33050

- Panama City (Bay County)

7938 Front Beach Road

Panama City Beach, FL 32408

- Pensacola (Escambia County)

3960 Navy Boulevard

Suite 16-17

Pensacola, FL 32507

- Port St. Joe (Gulf County)

106 Trade Circle

Suite A

Port St. Joe, FL 32456

- Key West (Monroe County)

3706 N. Roosevelt Blvd

Suite H

Key West, FL 33040

- Santa Rosa Beach (Walton County)

5008 US Hwy 98W

Unit 6&7

Santa Rosa Beach, FL 32459

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816

Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas to Submit – File online at http://www.horizonedocs.com/index.html	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – http://www.bp.com/iframe.do?categoryId=9033722&contentId=7062138	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	

Karen St John

BP America

Sr. Director, Regulatory Affairs

[redacted]
B6

Received(Date): Fri, 11 Jun 2010 06:01:02 -0400
From: ICC.Deputy@noaa.gov
Subject: DEEPWATER HORIZON - morning reports
To: Deepwater.HorizonDist@noaa.gov
Deepwater_Horizon_Report_54.pdf
forecast_20100613_1200CDT_20100610_2100CDTr.pdf
os_forecast_20100613_1200CDT_20100610_2100CDTr.pdf
landfall6_10_2010.pdf
LoopCurrentMap-6-10.pdf
LoopCurrentStatus-6-10.pdf

FOR OFFICIAL USE ONLY

CDR Mike Weaver
ICC Deputy

NOAA Emergency Response Division (ERD)
Report # 54: June 10, 2010 at 2000 PDT
MC 252 DEEPWATER HORIZON Incident, Gulf of Mexico, Major Spill Incident

Situation Update, Day 52:

Overview:

The 'top hat' containment cap, installed on June 3, continues to collect oil and gas flowing from the MC252 well and transport it to a drillship on the surface. The efficiency of the containment operation is improving. Oil collection reached 17,000 barrels/day today. The transfer of crude oil from the drillship to the barge Massachusetts began the morning of June 9. When the process is complete, the barge will transport the oil to an onshore terminal. Efforts to enhance oil collection continue. Further connections via one or more pipes to the ports on the side of the blow out preventer are being made to increase collection capability and are thought to be completed by next week.

Meanwhile, work on the first relief well continues and has currently reached a depth of 13,978 feet. The second relief well is at 8,576 feet. The wells are planned to reach their target depth and be completed in mid-August. The relief wells are believed to be the permanent solution for stopping the oil and gas flowing from the well into the Gulf of Mexico.

Almost 3,600 vessels are involved in the response effort, including skimmers, tugs, barges and recovery vessels. Operations to skim oil from the surface of the water have recovered, in total, approximately 383,000 barrels (16.1 million gallons) of oily liquid.

Trajectories:

Onshore (SE/S/ESE) winds are forecast to continue through the weekend at 5-10 knots. Persistent onshore winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands and the Florida Panhandle. Coastal regions in Mississippi Sound and west of Pensacola may continue to experience limited shoreline oiling. Persistent southeasterly winds are also resulting in movement of oil towards the Chandeleur Islands, Breton Sound, and the Mississippi River delta and these areas are threatened by shoreline oiling.

Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy that has pinched off the main Loop Current (LC). Trajectories indicate that some of these sheens may continue southward along the eastern edge of the main LC eddy, whereas some may be getting entrained into the counter-clockwise eddy to the NE of the main LC eddy. A CG overflight off the west coast of Florida yesterday saw no oil. A NOAA overflight today reported seeing only noncontiguous sheens 45 nm to the SSE of the source.

Hot Topics:

Loop Current: The Loop Current (LC) pattern is continuing to slightly increase the risk of the Loop Current serving as a mechanism to transport oil toward The Florida Straits. There are no significant amounts of oil being moved toward the Loop Current at this time; however there has been a confirmation of a scattered tarball field at the northeast corner of the northern clockwise eddy that pinched off from the LC. This eddy may have begun to re-attach to the main Loop Current, and could completely re-join it over the next few days to a week. This reforming of the Loop Current could provide a pathway for tarballs to move to the Florida Straits.

Tarballs: Tarballs collected during the R/V Walton Smith sampling cruise to the edge of the northern eddy that broke off of the main Loop Current were received by NOAA staff today and will be sent to LSU for source analysis. The analysis should be complete by early next week. The tarballs are from an area targeted by observations from a C-130 overflight (26 46.067N / 86 03.768W). The R/V Walton Smith reported finding sheens and trace amounts of oil described as "floating soft pads, dark browny-orange or reddish-orange. Size ranged from ~6" oval to dinner plate size and some smaller. Not super common, not rare… 5-6 pass the ship within 150' every few minutes, sometimes two or three together."

Florida oil surveillance: With the potential reconnection of the loop current to the northern eddy, there is a potential path for oil to move to the Florida Straits. As a result, Florida is increasing its vessel and aerial surveillance of its coastal zone. Experienced ORR observers are flying over the eastern edge of the Loop Current and vessels are now surveying for tarballs near the Florida Straits daily. Florida responders plan to use this information to identify and prepare for potential oiling threats and the information will also help ground truth NOAA trajectories. In addition, tomorrow ORR staff is training 11 USCG and FL state staff in proper aerial observation techniques.

Dispersant use: ORR is working with EPA to generate a more efficient process for selecting locations for dispersant application, as well as key decisions for continued dispersant application.

Clean up operation challenges: As cleanup operations move into new locations, including National Park property and historic areas, coordination between clean-up operations and the Environmental Unit is becoming increasingly important. ORR responders are working to address concerns regarding the entanglement of turtles in snare boom, coordination with DOI for operations on NPS land, and coordination with State Historic Preservation Office staff, when necessary.

Media and Meetings:

Congressional Science Briefing: Today, ORR participated in a science call with congressional staff to share NOAA's analysis of the R/V Brooks McCall water samples. The call is reported to have gone very well. Still, there is continued confusion regarding oil concentrations and what these concentrations mean in terms of potential impacts. There is also confusion on how best to portray this information so that it is not misinterpreted.

VIP Visit: Secretary Locke and six congressional representatives plan to visit Robert, Louisiana on Friday, June 11, 2010. Both Secretary Locke and the congressional delegation will be briefed by NOAA Scientific Support Coordinators. Secretary Locke plans to fly onboard a NOAA Twin Otter airplane along the coast from Gulfport, MS to New Orleans, LA. This flight will be collecting multispectral imagery to help map oil locations and will direct clean-up efforts.

PRFA status update:

Seafood Safety	Approved
Thomas Jefferson / WHOI cruises for mapping sub surface areas west of the Mississippi Delta for potential hydrocarbons and dispersants	Approved
Gordon Gunter and Weatherbird II Cruises	Approved verbally, working on obtaining written documentation from FOSC
HF Radar	Being reevaluated by modelers for resubmission for funding, likely directly to BP.
Recreational Fishing	ORR and NMFS are pursuing the rec. fishing assessment as a NRDA study
Remote Sensing Activities by NGS	In review by SSC.
OR&R base increase to $7.7 million	Under USCG consideration

NOAA Roles: Many personnel are on scene and many more are engaged remotely. Additional NOAA assets are being made available for the spill.

Office of Response and Restoration (OR&R)

- Scientific support to the U.S. Coast Guard and Unified Command

Emergency Response Division (ERD)

- Predict oil fates and effects
- Overflight observations and mapping
- Identify resources at risk
- Recommend appropriate clean-up methods
- Manage data and information

Assessment and Restoration Division (ARD)

- Plan for assessment of injuries to natural resources
- Coordinate with state and federal trustees

National Weather Service

- Incident weather forecasts including marine and aviation

National Environmental Satellite, Data, and Information Service (NESDIS)

- Experimental imagery for spill trajectory forecasts
- Data Visualization

National Marine Fisheries Service (NMFS)

- Issues related to marine mammals, sea turtles, and fishery resources
- Public Affairs support to the Joint Information Center

Office of Marine and Aviation Operations (OMAO)

- USCG Liaison to the DCO Incident Support Team USCG Headquarters
- Aircraft and vessel support

Oceanic and Atmospheric Research

- Oceanographic and atmospheric modeling and data support.
- Gulf of Mexico Sea Grant programs providing technical advice on impacts to living resources and coastal communities.

National Ocean Service

- Support from ONMS for staffing and technical information
- Oceanographic modeling support
- Public Affairs support to Joint Information Center

Nearshore Surface Oil Forecast Deepwater Horizon MC252

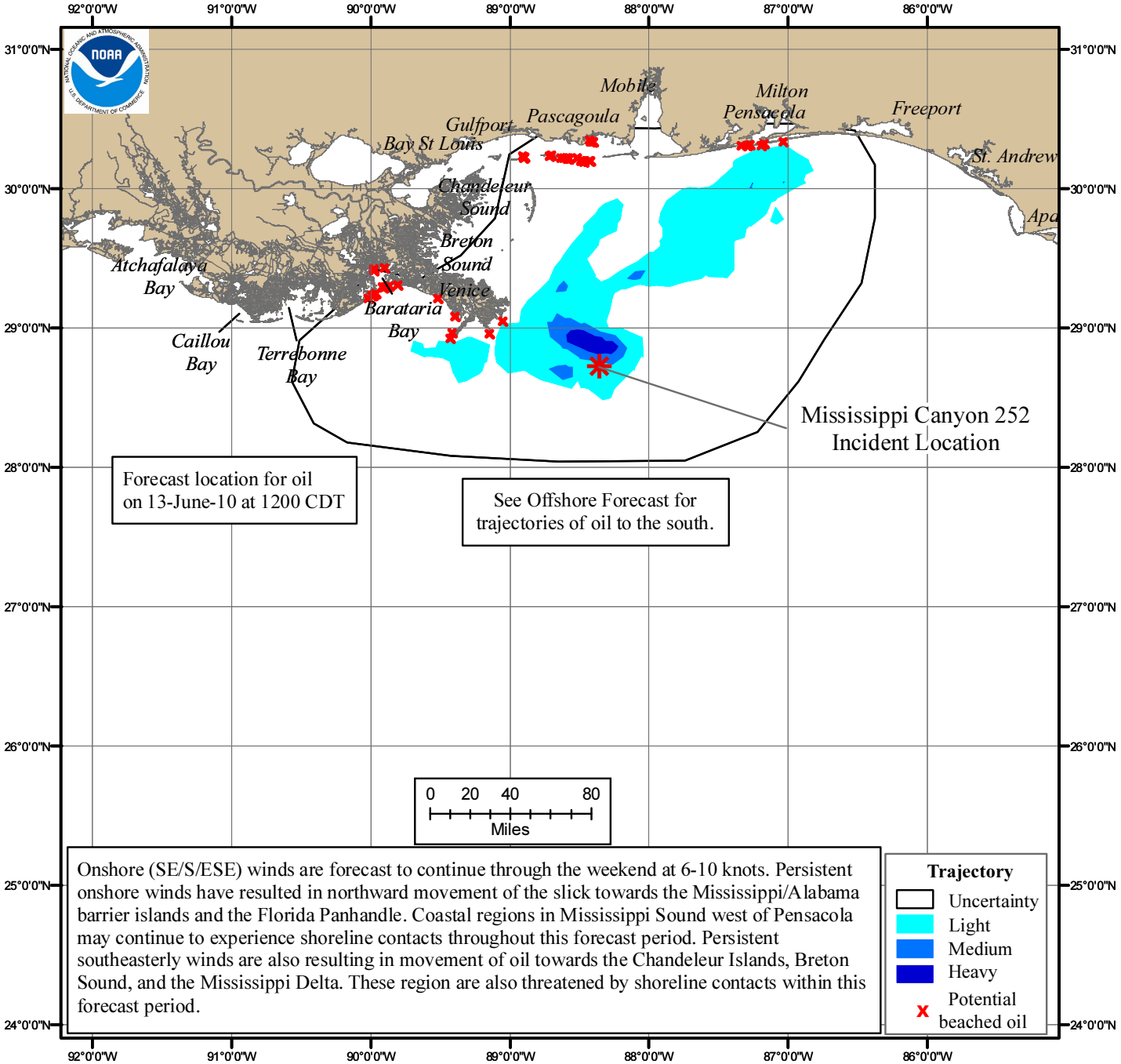
NOAA/NOS/OR&R

Nearshore

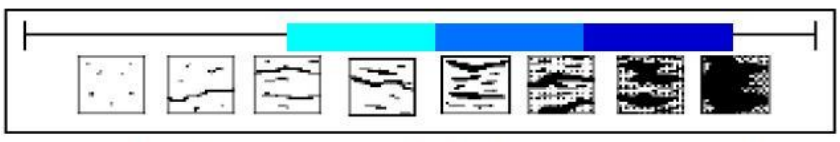
Estimate for: 1200 CDT, Sunday, 6/13/10

Date Prepared: 2100 CDT, Thursday 6/10/10

This forecast is based on the NWS spot forecast from Thursday, June 10 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Thursday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.



Onshore (SE/S/ESE) winds are forecast to continue through the weekend at 6-10 knots. Persistent onshore winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands and the Florida Panhandle. Coastal regions in Mississippi Sound west of Pensacola may continue to experience shoreline contacts throughout this forecast period. Persistent southeasterly winds are also resulting in movement of oil towards the Chandeleur Islands, Breton Sound, and the Mississippi Delta. These region are also threatened by shoreline contacts within this forecast period.



this scale bar shows the meaning of the distribution terms at the current time

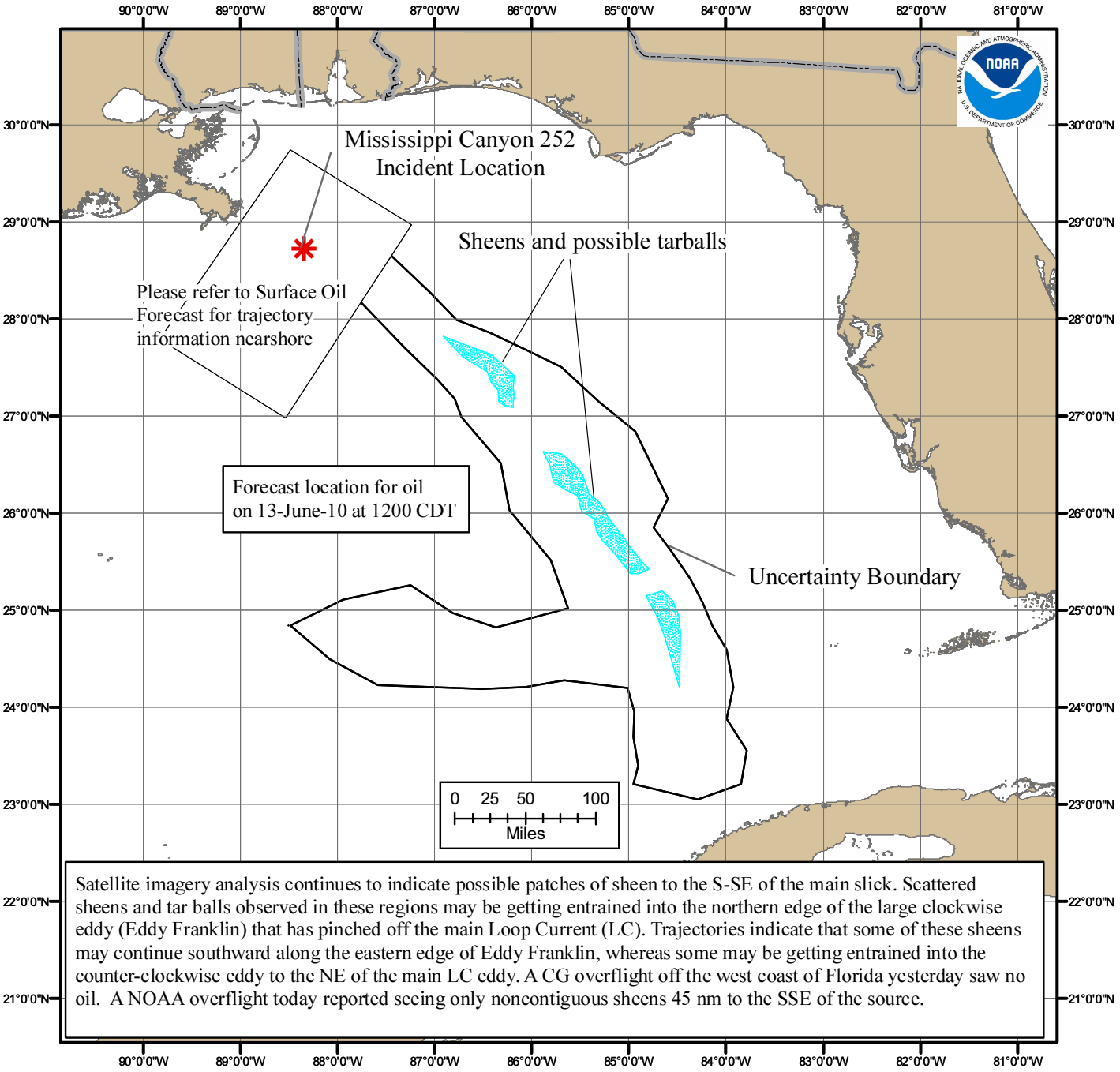
Next Forecast:
June 11th PM

Offshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R **Offshore**

Estimate for: 1200 CDT, Sunday, 6/13/10
Date Prepared: 1900 CDT, Thursday, 6/10/10

Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM , NRL, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 9/10 satellite imagery analysis. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).

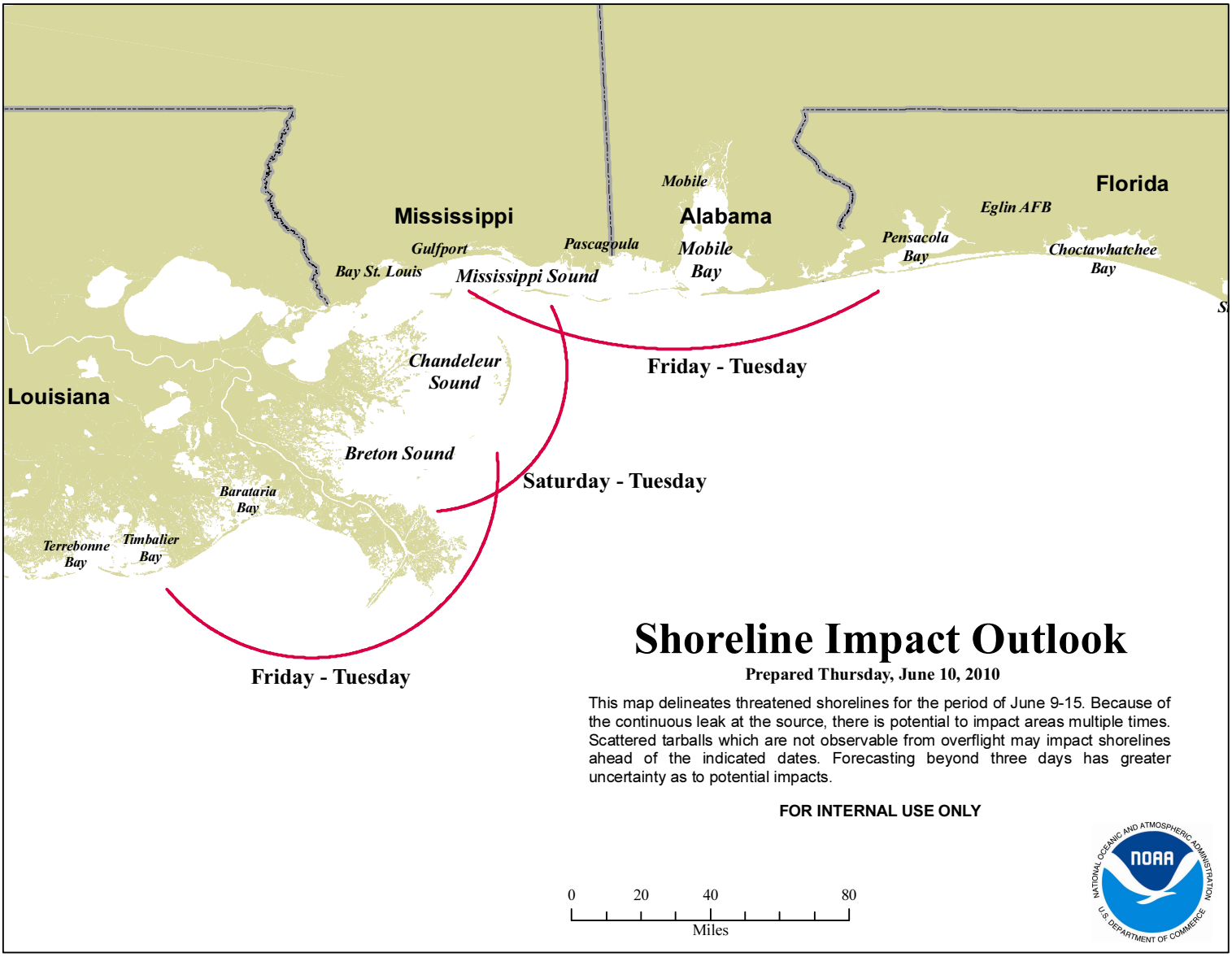


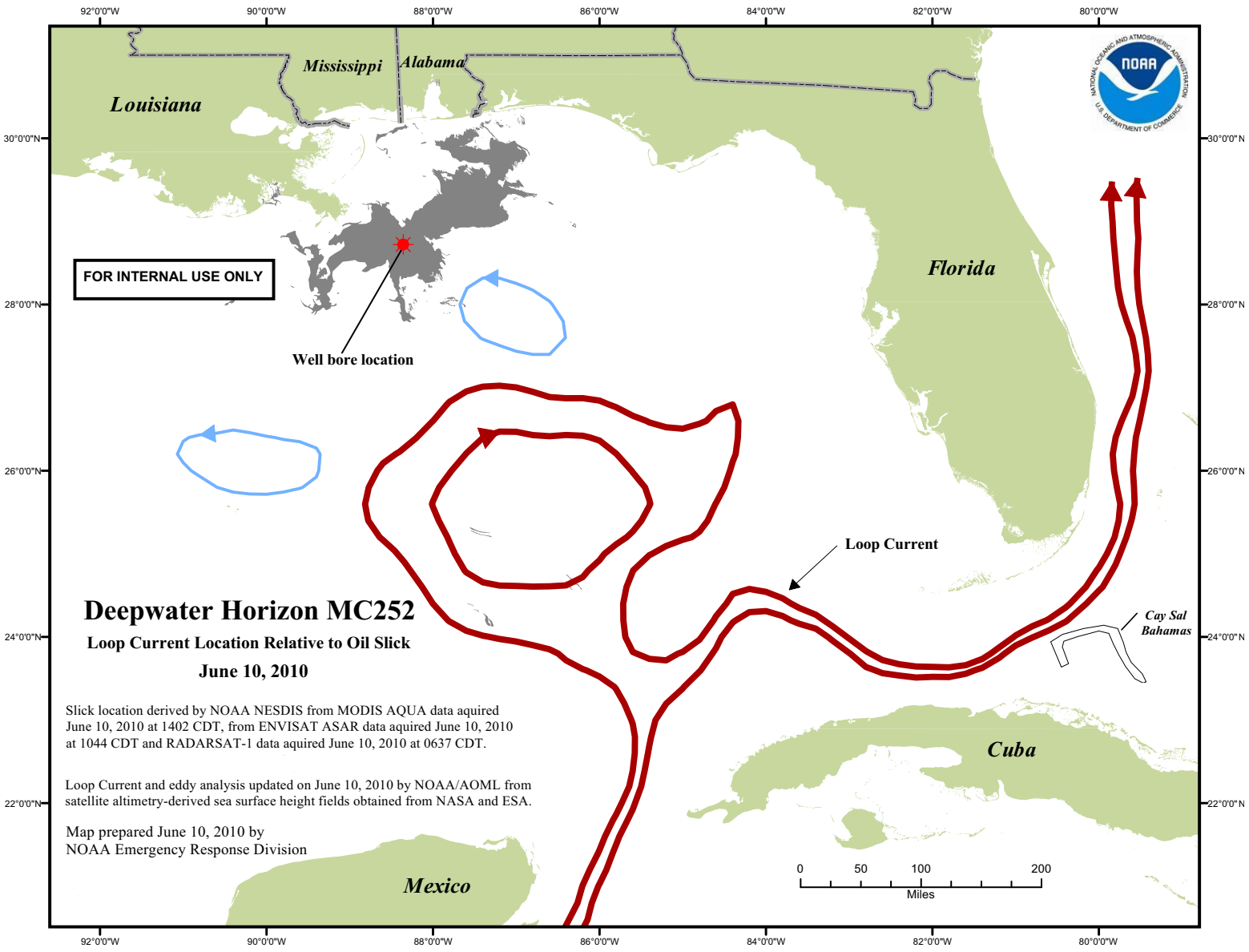
Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that some of these sheens may continue southward along the eastern edge of Eddy Franklin, whereas some may be getting entrained into the counter-clockwise eddy to the NE of the main LC eddy. A CG overflight off the west coast of Florida yesterday saw no oil. A NOAA overflight today reported seeing only noncontiguous sheens 45 nm to the SSE of the source.



this scale bar shows the meaning of the distribution terms at the current time

Next Forecast:
June 11th PM


Mississippi
Alabama
Florida
Louisiana
Mobile
Gulfport
Pascagoula
Mobile Bay
Eglin AFB
Pensacola Bay
Choctawhatchee Bay
Bay St. Louis
Mississippi Sound
Chandeleur Sound
Breton Sound
Barataria Bay
Terrebonne Bay
Timbalier Bay
Friday - Tuesday
Saturday - Tuesday
Friday - Tuesday
Shoreline Impact Outlook
Prepared Thursday, June 10, 2010
This map delineates threatened shorelines for the period of June 9-15. Because of the continuous leak at the source, there is potential to impact areas multiple times. Scattered tarballs which are not observable from overflight may impact shorelines ahead of the indicated dates. Forecasting beyond three days has greater uncertainty as to potential impacts.
FOR INTERNAL USE ONLY
0 20 40 80
Miles
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE


92°0'0"W
90°0'0"W
88°0'0"W
86°0'0"W
84°0'0"W
82°0'0"W
80°0'0"W
30°0'0"N
28°0'0"N
26°0'0"N
24°0'0"N
22°0'0"N
Louisiana
Mississippi
Alabama
Florida
Cuba
Mexico
FOR INTERNAL USE ONLY
Well bore location
Loop Current
Cay Sal
Bahamas
Deepwater Horizon MC252
Loop Current Location Relative to Oil Slick
June 10, 2010
Slick location derived by NOAA NESDIS from MODIS AQUA data aquired June 10, 2010 at 1402 CDT, from ENVISAT ASAR data aquired June 10, 2010 at 1044 CDT and RADARSAT-1 data aquired June 10, 2010 at 0637 CDT.
Loop Current and eddy analysis updated on June 10, 2010 by NOAA/AOML from satellite altimetry-derived sea surface height fields obtained from NASA and ESA.
Map prepared June 10, 2010 by
NOAA Emergency Response Division
0
50
100
200
Miles

TIME: 8:00pm CDT, June 10, 2010
TO: NOAA SSCs
FROM: NOAA Office of Response and Restoration / Emergency Response Division
Seattle, WA 98115

SUBJECT: Deepwater Horizon MC252 incident and the Loop Current

Summary The Loop Current pattern is continuing to slightly increase the risk of the Loop Current serving as a mechanism to transport oil toward The Florida Straits. There continues to be no significant amounts of oil being moved toward the Loop Current. However, there has been a confirmation of a scattered tarball field at the northeast corner of the northern clockwise eddy (Eddy Franklin). This eddy may have begun to re-attach to the main Loop Current, and may or may not completely re-join it over the next few days to a week. This would provide a pathway for tarballs to move to the Florida Straits.

Observations There continues to be no evidence of high concentrations of oil in or near the Loop Current. The visible sheens near the northern edge of the Loop Current show signs of dissipating, and a US Coast Guard overflight today around the southern Gulf and Florida Keys did not observe any visible sheens. Satellite analysis today indicated a few small sheens in the region of Eddy Franklin. These may be the result of oil from the spill that has been circulating in that eddy.

As discussed in previous reports, scattered tarball fields are generally not visible from fixed wing aircraft or satellite observations. To confirm the presence of tarballs, the vessel R/V Walton Smith traveled to the northeast corner of the Loop current, where frequent sheens had been observed in the Satellite imagery. They found "little orange particles and some bits of more aggregated red oil" at location 26°46.07'N--86°03.77'W. The ship has taken some samples that have now been shipped to LSU. We expect analysis of those samples this Saturday.

That location is near the boundary of the counter clockwise eddy to the northeast of Eddy Franklin where there have been frequent sheens observed by satellite analysis. We expect some of the oil in that location to remain in that eddy, but some may be drawn into Eddy Franklin. Once in Eddy Franklin, some of it may remain there, circulating around the central Gulf, while some of it may follow a pathway that leads to the Florida Straits.

There is some uncertainty as to whether Eddy Franklin has begun to re-attach to the main Loop Current. The connection to the main Loop Current on the southwestern side of the eddy has weakened. However, some of the models and the sea surface height analysis indicate a pathway from the far eastern edge of the Eddy Franklin to the Florida Current, indicating a possible re-connection. Two USF deployed drifter buoys have moved from the eastern edge of Eddy Franklin to the east, toward the Florida Straits, confirming this connection. We continue to monitor the situation closely.

The sheen that has been pulled toward the Loop Current continues to be stretched out and thinned. An NOAA overflight (Wesley) to the southeast of the spill site today observed

Document ID: 0.7.19.2040.6

"isolated patches of sheen" extending toward Eddy Franklin. We do not expect larger concentrations of oil to move toward the Loop Current in the near future.

The observed tarballs are not likely to reach the Florida Straits in the next 3-4 days. The observations were in an area of convergence; any oil ultimately making it to the Florida Straits will likely be far more widely scattered. In order for tarballs to reach shorelines, there must be a persistent shoreward wind to bring them to shore. At this time, we estimate that the fraction that may reach shorelines may be slightly above background levels of tarballs already on the Florida shorelines.

How we are monitoring We continue to monitor the Loop Current characteristics from a number of satellite and model sources, a vessel contracted by BP to monitor at the northern front, and drifter buoys dropped in or near the Loop Current over the last few weeks.

The US Coast Guard will be conducting overflights daily to look for signs of significant oil over the Florida Shelf and Loop Current; a NOAA observer will be on board every 2-3 days. In addition, a sentry plan has been put in place by the Florida Peninsula Incident command. It consists of vessels transecting the Florida Current, west of the Dry Tortugas, in order to measure the tarball concentrations entering the Florida Straits. This activity should serve to provide a warning if significant tarball fields approach the Florida Straits.

What can be expected in the future It is likely that at some point in the future, another fraction of the oil will move south from the spill site. If Eddy Franklin remains separated from the Loop Current, most of the oil will circulate around the central gulf, weathering and dissipating long before nearing any shorelines. If Eddy Franklin has re-joined the main Loop Current, any oil moved to the northern extent of the eddy will once again have a pathway to the Florida Straits and beyond. We will continue daily monitoring of the Loop Current in order to monitor this re-connection.

Document ID: 0.7.19.2040.6

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CDR Mike Weaver
ICC Deputy

Received(Date): Fri, 11 Jun 2010 15:31:07 -0400
From: Joe Inslee <Joe.Inslee@noaa.gov>
Subject: Notes from June 11, 11 AM NRT Call
To: NOAAHQ.Leadership@noaa.gov, Policy.Contacts@noaa.gov,PCO.Contacts@noaa.gov, dwh.staff@noaa.gov, David.Kennedy@noaa.gov,KSarri@doc.gov, Nickie Lambert <Nickie.Lambert@noaa.gov>

Afternoon-
Below are notes from the June 11, 11 AM NRT call

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National Response Team Call
June 11, 2010
11:00 AM

The next NRT call will be on Monday June 14th at 11:00.

Situation Status:

- Yesterday 15,000 bbls of oil were recovered with the "Top Hat". This is reaching the maximum recovery rate of the current recovery ship. Other vessels are being brought in to increase the maximum recovery rate.

- A new flow rate was released yesterday (20-40,000 bbls). This new flow rate is a revised estimate of the flow rate before the riser pipe was cut. Work continues on creating a flow rate after the rise cut was made.

- The first relief well remains at approximately 8,700ft below the seafloor. Casing continues to be installed.

- The second relief well is at 3,400 ft below the seafloor. They have completed the BOP diagnostics.

- There was 1 burn yesterday.

- 9,600 bbls of an oil/water mix was recovered yesterday via skimming operations.

- 2,700 gallons of surface and 10,000 gallons of subsea dispersants were applied yesterday.

Interagency Solutions Group:

- There are 18 agencies as part of ISG.

- One main topic has been the barrier berm proposals.

o -Emergency permits have been approved for LA. There are going to be 6 berms to the West totaling 60 miles. There will be 3 berms to the East, totaling 18 miles.

- A proposal has been approved to fill in the "Katina Cut" on Dauphin Island.

Intergovernmental Affairs Update:

- Continue to discuss the President's visit to the Gulf next week.

Congressional Affairs:

- Today a Senate CODEL is in the Gulf.

- The House Government Oversight Committee will be in the Gulf on Monday to ask MMS employees questions as part of their investigation.

Legal Affairs:

- Continue to focus on cost recovery and claims issue.

- House passed a bill allowing for more access to the Trust Fund.

--
Joe Inslee
Policy/Outreach Assistant
Assessment and Restoration Division
NOAA Office of Response and Restoration
1305 East-West Highway SSMC 4, Rm. 10219
Silver Spring, MD 20910 Office 301-713-4248 ext. 202
[redacted] B6
Fax 301-713-4387

Received(Date): Sat, 12 Jun 2010 04:29:11 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update June 11

Gulf of Mexico Oil Spill Response Update

06/11/2010 – 5:00pm EDT

BP is working as part of the Unified Command to accomplish three main objectives in the Gulf of Mexico:

1. On the Sea Floor to stop the flow of oil through various strategies;

2. On the Surface to minimize impacts of the spill; and

3. Onshore to protect the shoreline and inform the public.

Regional Highlights

- 15,400 barrels of oil captured by the Lower Marine Riser Package Cap on June 10.
- 203 skimmers are now active across the impacted states, an increase of 65 since Wednesday.
- 22,720 volunteers trained and working on clean up.
- Over $58 million in claims paid – see State Claims Summary data by county below.

Offshore – Sea Floor

BP's priority is to reduce and stop the flow of oil subsea and minimize environmental impacts through multiple strategies:

ContainmentRecovery – Lower Marine Riser Package (LMRP) Cap

Operations Summary: 15,400 barrels of oil were captured through the LMRP cap during the past 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.*

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, with approximately 10,279 gallons applied on June 10. EPA is allowing subsea application of the currently-used dispersant to continue. There is a reduction in the need for subsea dispersant with increased capture of oil through the LMRP Cap.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement down the hole. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) has passed 13,800 feet below sea level. This well was "spudded" on May 2.

- The second relief well (work being performed by *Development Driller II*) is at approximately 8,600 feet below sea level. Drilling began on May 16.

Offshore – Surface Spill Response

Cleanup Vessels – 3,772 vessels are deployed, including tugs, barges and recovery boats.

Skimming Vessels – 203 of the cleanup boats are skimmers, designed to separate oil from water. Approximately 18.5 million gallons of oil-water mix have been recovered and treated.

Surface Dispersant – An additional 1,366 gallons of dispersant was applied on the surface yesterday. Increased oil recovery through the LMRP Cap and subsea application of dispersant reduces the need for surface application.

In-Situ Burning – No burns were conducted on Thursday.

Spill Response Technology and Offers of Services or Products –

- BP has received more than 80,000 ideas on how to stop the flow of oil or contain the oil spill since the Gulf of Mexico incident began. To submit alternative response technology, services or

products, call (281) 366-5511. Each caller to the Houston suggestion line will have their details entered into the Horizon Call Center database. The database will then send the caller a simple form, termed either the Alternative Response Technologies form, or the Products and Services Form, for them to set out the details of their idea. The forms are available online at: www.horizonedocs.com. After the caller completes and submits the form, it is sent for review by a team of 30 technical and operational personnel who will review its technical feasibility and application. Given the quantity of the proposals and the detail in which the team investigates each idea, the technical review can take some time.

- The U.S. Government has also issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That announcement can be found online at: https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore Response

Boom Report – 2.4 million feet of containment boom have been deployed (with an additional 622,000 feet staged). 2.9 million feet of sorbent boom have been deployed (with an additional 2.27 million feet available or being staged.)

$500 Million for 10-year Gulf Research Initiative to Study Spill Impacts – BP is contributing $500 million over 10 years to fund an open research program studying the impact of the Deepwater Horizon incident, and its associated response, on the marine and shoreline environment of the Gulf of Mexico.

BP Provides $75 million in block grants –BP announced it is provided the states of Mississippi, Alabama and Florida $25 million each to continue implementation of state Area Contingency Plans.

Volunteers and Training – 22,720 volunteers are signed up, trained, and working as of June 10. Volunteers are being trained in five different modules that range from safety for beach clean-up, to wildlife monitoring, handling of hazardous materials and vessel operation for laying boom. As of today, more than 29,000 training courses have been completed by those working on the incident. Information about training can be found on the incident website at www.deepwaterhorizonresponse.com under “volunteers.”

State Specific Websites – These websites are designed to provide state-specific oil spill information to residents of communities affected by the Deepwater Horizon oil spill.

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com

- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

Onshore – Regional Operations and Outreach

Claims Summary June 10

Alabama Counties	Claims Paid
Mobile	$7,408,634
Baldwin	$2,075,647
Monroe	$56,000
Montgomery	$31,100
Covington	$25,000
Clarke	$24,500
Wilcox	$23,500
Escambia	$19,000
Plaquemines	$15,000
Tuscaloosa	$12,500
Dale	$12,500
Chilton	$12,500
Madison	$11,389
Washington	$10,226
Other Counties	$394,002
Alabama Total	**$10,131,496**

Florida Counties	Claims Paid
Franklin	$1,908,257
Escambia	$1,510,601
Okaloosa	$1,331,822
Bay	$1,186,565
Santa Rosa	$494,120
Wakulla	$358,450
Gulf	$268,000
Walton	$153,930
Pasco	$53,500
Liberty	$42,300
Pinellas	$27,500
Washington	$25,000
Jackson	$25,000

Leon	$22,500
Duval	$20,000
Calhoun	$16,075
Citrus	$15,000
Lake	$12,500
Hillsborough	$12,500
Other Counties	$217,119
Florida Total	**$7,700,737**

Louisiana Parishes	Claims Paid
Plaquemines	$6,492,735
Jefferson	$5,999,574
Terrebonne	$5,511,305
Lafourche	$3,425,646
Saint Bernard	$2,907,577
Orleans	$1,474,523
Saint Tammany	$1,256,230
Vermilion	$956,133
Iberia	$587,624
Saint Charles	$569,100
Calcasieu	$460,300
Saint Mary	$441,800
Cameron	$389,150
Lafayette	$253,694
Tangipahoa	$205,600
Livingston	$132,500
East Baton Rouge	$131,304
St John the Baptist	$88,750
Assumption	$61,500
Saint Martin	$60,500
Washington	$56,700
Saint Landry	$43,000
Jefferson Davis	$42,500
Ascension	$36,400
Beauregard	$36,000
Saint James	$29,000
Pointe Coupee	$24,900
Avoyelles	$23,900
Other Parishes	$977,099
Louisiana Total	**$32,675,044**

Mississippi Counties	Claims Paid
Harrison	$2,982,955
Jackson	$1,507,610
Hancock	$1,013,898

Stone	$103,625
Pearl River	$99,000
George	$55,500
Lamar	$55,000
Pike	$19,300
Forrest	$15,000
Marion	$12,500
Madison	$11,800
Lawrence	$10,000
Neshoba	$10,000
Other Counties	$214,550
Mississippi Total	**$6,110,738**
Other States	$1,555,774
Total Claims Paid	**$58,173,790**

Claims

ξ 31 Claims offices have been established by BP across the Gulf Coast to provide locations where people can go to file or discuss claims. There are more than 500 claims adjusters staffing the offices. Vietnamese and Spanish translators are in some offices. *Note:* No person asserting a claim or receiving payment for interim benefits will be asked or required to sign a release or waive any rights to assert additional claims, to file an individual legal action, or to participate in other legal actions associated with the Deepwater Horizon incident.

ξ The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: www.bp.com/claims

Claims Offices

Louisiana (13 locations) –

ξ Belle Chasse/Gretna

2766 Belle Chasse Hwy

Belle Chasse, LA 70037

ξ Chauvin (Terrebonne Parish)

5703 Hwy 56

Chauvin, LA 70344

ξ Cut Off (Lafourche Parish)

Tarpon Heights Shopping Center

Unit 2

16263 E. Main Street

Cut Off, LA 70345

ξ Grand Isle (Jefferson Parish)

3811 LA 1 (Community Center)

Grand Isle, LA 70358

ξ Houma (Terrebonne Parish)

Plaza Caillou Shopping Center

814 Grand Caillou Road

Suite 2 & 3

Houma, LA 70363

ξ Lafitte (Jefferson Parish)

2654 Jean Lafitte Blvd

Town Hall

Lafitte, LA 70067

ξ Morgan City (St. Mary Parish)

931 US Hwy 90 East

Bayou Vista, LA 70380

- New Orleans East (Orleans Parish)

4375 Michoud Blvd

New Orleans, LA 70461

- New Iberia (Iberia Parish)

956 S. Lewis Street

New Iberia, LA 70560

- Slidell (St. Tammany Parish)

2040 Gause Blvd., Suite 10

Slidell, LA 70461

- St. Bernard (St. Bernard Parish)

1345 Bayou Rd

Saint Bernard, LA 70085

- Venice/Boothville (Plaquemines Parish)

41093 Hwy LA 23

Boothville, LA 70038

- Westwego (Jefferson Parish)

1280 Westbank Expressway

Westwego, LA 77094

Mississippi (3 locations) –

- Bay St. Louis (Hancock County)

1171 Highway 90

Bay St. Louis, MS 39520

- Biloxi

920 Cedar Lake Rd, Suite K

Biloxi, MS 39532

- Pascagoula

5912 Old Mobile Hwy

Suite 3

Pascagoula, MS 39581

Alabama (5 locations) –

- Bayou LaBatre

13290 N. Wintzell Avenue

Bayou LaBatre, AL 36509

- Dauphin Island (Mobile County)

1008 Alabama Avenue

Dauphin Island, AL 36528

- Foley (Orange Beach/Gulf Shores/Bon Secour)

1506 North McKenzie Street (HWY 59)

Suite 104

Foley, AL 36535

- Gulf Shores / Orange Beach (Baldwin County)

24039 Perdido Beach Blvd

Suite 1

Orange Beach, AL 36561

- Mobile (Mobile County)

325 East I-65 Service Rd S

Suite 1

Mobile, AL 36606

Florida (10 locations) –

- Apalachicola (Franklin County)

194 14th Street

Suite 105

Apalachicola, FL 32320

- Crawfordville (Wakulla County)

3010 Crawfordville Hwy

Suite A&B

Crawfordville, FL 32327

- Ft. Walton Beach (Okaloosa County)

348 SW Miracle Strip Pkwy

Suite 13

Fort Walton Beach, FL 32548

- Gulf Breeze (Santa Rosa County)

5668 Gulf Breeze Pkwy

Unit B-9

Gulf Breeze, FL 32563

- Marathon (Monroe County)

7885 Overseas Hwy

Marathon, FL 33050

- Panama City (Bay County)

7938 Front Beach Road

Panama City Beach, FL 32408

- Pensacola (Escambia County)

3960 Navy Boulevard

Suite 16-17

Pensacola, FL 32507

- Port St. Joe (Gulf County)

106 Trade Circle

Suite A

Port St. Joe, FL 32456

ξ Key West (Monroe County)

3706 N. Roosevelt Blvd

Suite H

Key West, FL 33040

ξ Santa Rosa Beach (Walton County)

5008 US Hwy 98W

Unit 6&7

Santa Rosa Beach, FL 32459

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	

Karen St John

BP America

Sr. Director, Regulatory Affairs



Received(Date): Sat, 12 Jun 2010 07:55:28 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: DWH_ACTIONS_and_UPDATES_6.11.2010
To: DWH leadership <DWH.Leadership@noaa.gov>
DWH_ACTIONS_and_UPDATES_6.11.2010.xls
OMAO DWH Aircraft Tasking - NMFS NOS OAR Program Impacts.doc
OMAO DWH Ship Tasking - NMFS NOS OAR Program Impacts.docx
MMST Health and Stranding Update 06-10-10.doc
2010_0611_Seafood Safety Daily Report.docx

Good morning
Here is the report from yesterday evening.
NOS was having IT issues and I didn't see that this report went through so I am resending.
Best,
Jen

PRIORITY ISSUES	
RESPONSE OPERATIONS - NIC/ICC/NRT	Response Operations Source Control: Total oil collected since the LMRP Cap containment syste approximately 88,700 barrels. Dispersant use was reduced from 10 to 7 ga NRT · No calls scheduled this weekend. · NRT Marsh Cleanup Report MC252 is being reviewed by the NRT. · Louisiana barrier project: $360 million in escrow from BP, $60 million tr · Alabama: o Dauphin Island/Katrina Cut project: $10-12 million, 74 days est. complet o Perdido Pass project: 36” pipe booms attached to multiple 40” pipes acro for emergency vessels; est. completion June 2011 NIC Activities · Public Health Response: NIC/IASG staff participated on an interagency c DWH. Public health response will be coordinated by the WH Domestic Po Communications Plan addresses: o worker safety o public health risks from exposure to oil and dispersants o seafood inspection o reopening of closed fisheries Each agency has been asked to identify designated spokespeople for comm Medicine is planning a public workshop on DWH health effects in New Or asked to provide representation for seafood safety and fishery closures. · Spatial Data: Daily Loop Current graphic submitted to the NIC for JIC cl outgoing team of John Wagner (NMS) and Michelle Johnston (NMS) have expanding ERMA’s use at the NIC. Created requirements document to ide would be useful to senior decision makers at NIC and make ERMA more r Situation Unit to better display ERMA on touch screen and multiple large s
SCIENCE	REPORT ATTACHED
LMR	Fisheries Closure * There were no modifications to the closed area in the Gulf EEZ for Jur 78,264 sq mi (202,703 sq km), or about 32% of the GOM EEZ. The Alabama Department of Conservation and Natural Resources anno

Response Operations
Source Control: Total oil collected since the LMRP Cap containment system (top hat #4) was implemented is approximately 88,700 barrels. Dispersant use was reduced from 10 to 7 gal per minute.
NRT
• No calls scheduled this weekend.
• NRT Marsh Cleanup Report MC252 is being reviewed by the NRT.
• Louisiana barrier project: $360 million in escrow from BP, $60 million transferred to state to start project.
• Alabama:
o Dauphin Island/Katrina Cut project: $10-12 million, 74 days est. completion time
o Perdido Pass project: 36" pipe booms attached to multiple 40" pipes across the pass with removable center section for emergency vessels; est. completion June 2011
NIC Activities
• Public Health Response: NIC/IASG staff participated on an interagency call about the public health response to DWH. Public health response will be coordinated by the WH Domestic Policy Council. The Public Health Communications Plan addresses:
o worker safety
o public health risks from exposure to oil and dispersants
o seafood inspection
o reopening of closed fisheries
Each agency has been asked to identify designated spokespeople for communications and policy. HHS Institute of Medicine is planning a public workshop on DWH health effects in New Orleans 22-23 June. NOAA will likely be asked to provide representation for seafood safety and fishery closures.
• Spatial Data: Daily Loop Current graphic submitted to the NIC for IIC clearance. Welcomed news

REPORT ATTACHED

Fisheries Closure

* There were no modifications to the closed area in the Gulf EEZ for June 11, 2010. The closed area remains 78,264 sq mi (202,703 sq km), or about 32% of the GOM EEZ.

The Alabama Department of Conservation and Natural Resources announces additional state waters were closed to all forms of recreational and commercial fishing effective at 6 p.m. June 10, 2010. The new precautionary closures affect all inside waters west of the Dauphin Island Bridge including Mississippi Sound, Heron Bay, Portersville Bay and Grand Bay. These closures are in addition to previous closures of all waters in the Gulf of Mexico including Pelican Bay and the waters of Mobile Bay east of the Mobile Ship Channel and south of a line from Mobile Ship Channel Marker Number 22 to Little Point Clear on the north side of Fort Morgan Peninsula.

Seafood Inspection

* Preparing to host a third training for State sensory assessors to begin next week in Pascagoula, MS.

* Three NWFSC staff are returning from Pascagoula after assisting NSIL staff in processing fish and shrimp for chemical analyses. Three other staff will depart for Pascagoula on Sunday 6/13.

* As of COB June 10, 2010:

o Total Number of Stations Sampled-- 154

TASK	DEADLINE
litigation hold on all documenets	on-going
talking points/on-pager Impacts to marine mammals and turtles	4/27/2010
Fisheries report and economic statistics	4/28/2010
Role, Schedule document	4/29/2010
Email Distribution List	4/29/2010
fishery closure disaster FAQs (can fishermen receive compensation near real-time?)	4/29/2010
Request for economic impacts to fisheries	4/29/2010
fisheries issues white paper as relates to spill	4/29/2010
Develop a long-term staffing plan	4/30/2010
White House White paper - OCS and OSLTF	4/30/2010
Develop plan for ICC to be 24 hrs	4/30/2010
Use of Satellite Imagery	4/30/2010
oil spill impacts, hurricances, and other weather systems	4/30/2010
provide trajectory information to DOT	4/30/2010
List of NMAO vessels in area	4/30/2010
Impacts to NOAA equipment (tide guages, etc)	4/30/2010
Unified Command locations	4/30/2010
Map of NOAA facilities in area	4/30/2010
contact info to send new ideas/technologies	4/30/2010
Worst Case Scenario briefing for Deputies	5/1/2010
assessment of historical weather in Gulf	5/1/2010
Prioritized list of Congressional of overflights	5/1/2010
policy decision -economic implications for WH	5/1/2010
Winer to serve as POC for NGO engagement	5/1/2010
Resources at Risk and accompanying FAQs about roles responsibiliites, and what we are actually doing	5/1/2010
follow-up with UNH science contacts, particularly in relation to dispersants	5/1/2010
one-pager biological impact from sheen and dispersants	5/2/2010
NOAA role in oil spills	5/3/2010
Turtle talking points	5/3/2010
legal record of use of dispersant at source	5/3/2010
work force mgt explore how to engage support of other agencies, states, etc	5/3/2010
Contingency Plan for Gordon Gunther	5/3/2010
Official Tasking for vessel allocation	5/4/2010
Loop Current Tps	5/4/2010
Verify NIST engaged in specimen collection	5/4/2010
understanding of safety of environment	5/4/2010
Safety of staff working on the ground	5/4/2010
catch & release in closed area tps	5/4/2010
recreational & commercial fishing data	5/4/2010
NASA to provide high spectral imaging	5/4/2010
Legal questions for response to Governors	5/4/2010
LO engagement training fishermen	5/4/2010
loop current factsheet	5/5/2010
High level worst case tps	5/5/2010

worst case web-ex meeting	5/5/2010
partner with google on product	on-going
NMFS updated info available for Govs. Calls	5/6/2010
best case scenario	5/6/2010
Request from DOI for assistance in chain of custody, storage procedures, laboratories that can do anaylysis, etc.	5/6/2010
Review EPA Dispersant Q&A	5/7/2010
info on how volunteers can get involved	5/7/2010
mechanism for small grants to academics	5/7/2010
Briefing for Francis Beinecke, CEO NRDC	5/7/2010
industry validator list for efforts in Gulf for Adm Allen phone call on 4/9	5/8/2010

Q&A on Sea Food Safety - NOAA/FDA authorities, roles, on-ground coordination, NMFS	5/9/2010
Assess NOAA to serve as lead for SCATs	5/9/2010
Compacted oil bricks collected at Dauphin Island, what NOAA scientist received, what info is known	5/9/2010
NOAA all hands message on gulf	5/9/2010
Rep. Cassidy requested info on testing/monitoring of the impacted fisheries areas and how it is determined what areas should be closed (or re-opened) and how that information is relayed with the public.	5/9/2010
analysis of "red-tide" samples	5/9/2010
NOAA Research Council oil and science coordination across NOAA; outcome actions for team and Larry Robinson	5/9/2010
Gov. LA request to dredge and fill for keeping oil off-shore	5/9/2010
follow-up on cooperative MOU and BP science sharing, and ability for contract academic scientist to share data	5/10/2010

Identify NOAA Scientist to serve as lead for our scientific activities and liaison for the academic community	5/10/2010
Follow up with MS and AL regarding fisheries closure. NMFS has call today with State Directors	5/10/2010
subject matter expert briefings	5/10/2010
Ensure we are adequately ramping up our capacity to analyze seafood safety issues	5/10/2010
Review DOS Embassy cable	5/10/2010
OMB request that NOAA serve as Federal lead for Deepwater Horizon consolidated website	5/11/2010
Provide guidance to staff regarding tracking hours, expenses, etc in relation to this event	5/11/2010
NOAA SSC /RRT efforts to host workshop on dispersants, region-wide assessment, impacts, long-term fate, etc.	5/11/2010
Seafood Sampling plan details for DOC	5/11/2010
Fisheries Disaster Declaration – Apparently the Governor sent a letter to Sec. Locke on April 30 seeking a disaster declaration for MS fisheries due to the leak. They have not heard anything about their request and asked for a status update.	5/11/2010
Process for forwarding funding requests to Unified Command or other leads	5/12/2010
Move proposals for IOOS HFR and second flight of P-3 through approval process	5/12/2010
Prepare request to Mary Landry regarding NOAAs research/scientific requests, ceiling of requests, and streamlined process for making requests	5/12/2010
Guidance for staff on congressional town halls, local/regional meetings with congress – ensure consistent messaging	5/12/2010
Request rough estimate for number of NOAA staff in the region, distinct from those on TDY	5/13/2010
Follow-up today for science coordination across NOAA and engagement/coordination with Navy	5/13/2010
Request for time on aircraft for NMFS enforcement	5/13/2010
Follow-up regarding interview scheduled for today in Houma	5/13/2010
Media protocol – work through Office of Communications and External Affairs on all media requests.	5/13/2010

External constituent engagement protocol – work through appropriate offices: Office of Communication and External Affairs and o Office of Legislative and Intergovernmental Affairs	5/13/2010
When you meet with external groups, please send a brief report out of the meeting and interests of the public (all)	5/13/2010
Barrier Island fill-in follow-up today, ensure Habitat Office is engaged; host call today with NOAA HQ and staff ASAP today (5/13)	5/13/2010
Request for data on normal numbers of turtle and dolphin strandings/deaths for the longest historical data	5/13/2010
Follow-up on flow-rate estimates	5/14/2010
NOAA needs to step out in a stronger way regarding our science and examining the whole ecosystem; air quality and water quality.	5/14/2010
Utilize Sea Grant more effectively to serve as our liaison for engaging with the community	5/14/2010
Engage external scientific community to validate video's from BP	5/14/2010
ADML Landry request 30-day ship time, use of the Gordon Gunther	5/15/2010
Overview of sampling that is not being done, broad issues related to understanding where the oil is and what its impact is (all assets, not exclusive to NOAA assets) Requested to send this to the NIC	5/15/2010
Clear Daily report on status of marine mammals and turtles	5/15/2010
Create daily chart showing mortality in relation to: #of total dead turtles, # sent for necropsies, # necropsies completed, and # dead due to oil.	5/15/2010
Assess capacity to conduct work needed – request to review this and if more people are needed	5/15/2010
develop timeline of seafood safety testing in advance of Monday Meeting/call at WH	5/15/2010
Ensure routine updates on 0800 calls on key issues NOAA is working on	5/15/2010
Ensure clear lines of communication and updates between NOAA and NIC	5/15/2010
Reconstruct process of how NOAA has been engaged with developing/communicating release rate	5/15/2010
Contact sheet for where to refer constituents to for key information	5/15/2010

Strategies to communicate our issues, particularly NMFS closures to public	5/15/2010
Assign lead technical expert for LA barrier island issue	5/15/2010
Check in on monitoring plan regarding use of sub-sea dispersants	5/15/2010
Develop product for what our NERR and NM Sanctuary sites are seeing	5/15/2010
Follow-up on release of chemical contents of dispersants for seafood safety testing needs	5/15/2010
Identify mechanism to follow-up with attendees at community meetings	5/15/2010
Follow-up on NOAA representation at NIC and if Mark Miller and Ralph Lopez need additional support	5/16/2010
Communication plan for loop current, ensure have same story for all constituents. Talking points for leadership	5/16/2010
Move loop current one-pager through clearance ASAP	5/16/2010
Change loop current map: oil portion stippled to indicate that the oil is not uniform across the spill, show loop current as a somewhat more varied flow	5/16/2010
Tuesday, 2-3 meeting hosted by OMB for bi-cameral Congressional meeting to review legislation that has been introduced – who should participate on behalf of NOAA	5/16/2010
Formal request needed through NIC for chemical components of dispersants, assistance from GC if needed	5/16/2010
Dispersant Monitoring plan should include efficacy of dispersant on oil, and biological/ecological impacts	5/16/2010
Hurricane outlook interactions with oil spill talking points and Tuesday 8am briefing	5/16/2010
Develop talking points for issue of Pelican cruise and scientific statements asserted in press	5/17/2010
Line Office assess participation in 3 technical working groups that are stood up by the Interagency Solutions group	5/17/2010
Develop proposal for engaging academic community (for review today)	5/17/2010
Reconsider fisheries closure in light of data provided from Pelican cruise. Also conducting random dock-side sampling to ensure seafood safety.	5/17/2010
Expedited review of Loop 101 and Talking Points – internal by 0930	5/17/2010
Expedited review of Long-Term Transport of Oil and Talking Points – internal by 1100	5/17/2010
Follow-up on research platforms that could be deployed and sampling plan from all assets	5/18/2010
Expert briefing for Loop Current	5/18/2010
Histogram by day for turtle strandings	5/18/2010
Request for talking points for turtle strandings	5/18/2010
Precautionary closure of fisheries due to potential of oil in the loop current	5/18/2010
Assign technical point for OMB, DOC, FDA group regarding seafood safety; .	5/18/2010
Need to have talking points and alert Cuba and Mexico regarding fishery closure and potential of oil in loop current	5/18/2010
Alert WH of fishery closure change	5/18/2010
Talking points on loop current, fishery closure, international, states – what we are doing to address the potential that oil is in the loop current	5/18/2010
PLEASE clearly note on all emails and documents if they are FOR INTERNAL USE ONLY	5/19/2010
Check-in with Michele Finn regarding assets available on the ground, consider requesting Navy support	5/19/2010
Talking points on activities underway in Sanctuaries and NERRs	5/19/2010
NOAA daily update, NOAA by the numbers, what NOAA has done for the day	5/19/2010

Do not provide economic data; contact Patricia Buckley (pbuckley@doc.gov) and Mark Doms (mdoms@doc.gov) for questions and cleared economic data	5/19/2010
Consider if the new Loop Current product can be made public and updated as appropriate	5/20/2010
Follow-up call with NMFS and Kennedy regarding particular aspects of seafood safety testing and oil aspects	5/20/2010
Time-line for science plan	5/20/2010
Recirculate oil and hurricane materials	5/20/2010
Step back and assess how we are operating in response to this spill, how can we do a better job in getting information out to the public (data, what we are doing, etc), what resources do we need to	5/20/2010
additional staff needs for ORR Seattle War room, etc	5/21/2010
Joint press release for Gunther and USF sampling cruise	5/21/2010
Notification to foreign nations of potential impacts to their states; need to do this in a timely manner as there are legal considerations	5/21/2010
Follow up on science plans, cruises – note of 7 vessels, request for clear list of vessels and activities	5/22/2010
Hurricane's and Oil Spill fact sheet and talking points, share with Jason Rolfe at the NIC	5/22/2010
Share stories for how the government is adding value to the spill response and associated activities	5/22/2010
Determine how many non-Federal partners NOAA has engaged with this process	5/23/2010
Engage oil spill community and hurricane community to familiarize on data, processes, communication strategies so that if hurricanes occur in the gulf, we can have a coordinated message and approach; include EPA in conversations and follow-up actions	5/24/2010
Consider deploying ORR staff to sit in the NHC to support FEMA on the ground	5/24/2010
Do a briefing for meteorologists on the ground in the coastal states that are prepared with information and talking points regarding oil spill and hurricanes	5/24/2010
Identify what our hurricane response plan is in light of a hurricane, both Unified Command and NOAA assets	5/24/2010
Follow-up for 3pm Oil Spill 101 WH Press Briefing	5/24/2010
Dispersant workshop – provide information on plans, who is invited, etc. for outreach to public and federal agencies, etc.	5/24/2010
Follow-up on EPA water quality monitoring plan, potentially item to be raised at a Principal call.	5/24/2010
Follow-up meeting among science players to ensure tight coordination across NOAA	5/24/2010
Succinct email for where we are on making data public and where that data will be housed	5/24/2010
Roll out seafood safety results this week, ensure is well coordinated	5/24/2010
Berm proposal - usace proposal for berm : NOAA review before noon	5/25/2010
Dispersant workshop at LSU - Planners need to connect Nancy Kinner	5/25/2010
Clear compilation of NOAA and contract cruise activities	5/26/2010
Review materials that are distributed daily and streamline	5/26/2010

Resources for ensuring ERMA/data information can be operational ASAP; request from other bureaus and departments for servers and hardware needs while we wait for equipment to arrive	5/26/2010
Follow-up on discussion regarding data compilation and peer review considerations for data	5/26/2010
clearance for posting on erma	6.5.2010
clearance process for factsheets, tps, etc	6.4.2010
ERMA: Data descriptions NOAA delivering to the public through geoplatform.gov.	6.4.2010
Talking pts/materials for dr. lubchenco for 6.7.2010 potus briefing on dwh	6.3.2010
intro speech for dr. lubchenco's chow presentation	6.3.2010
Need POC for Smithsonian offering to work with NOAA: 370,000 marine collections from the Gulf. They are deep ocean specimens from areas right around the oil spill. Result in a sense of relative abundance, and might provide a helpful basline. Jonathan Coddington (CODDINGTON@si.edu) lead for SI	6.5.2010

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LEAD	Status
ALL	On-going
NMFS	Completed
James	
Dieveney	Completed
Love	Completed
NMFS	Completed
NMFS through ICC	Completed
Moore	
Lukens, Bavishi, Holst	Completed
Moore	Completed
Holst	Completed
NWS	Completed
ICC	Completed
Taggert	Completed
Moore	
Holst	Completed
Taggart	Completed
ORR	Completed
Conner, Helton	Completed
NWS	Completed
Gray, Bagley	Completed
Doremus	
Winer	On-going
NMFS	Completed
kennedy request	Completed
Holst	Completed
Holst	Completed
NMFS	Completed
ORR	On-going
Taggart	
OMAO	Completed
Conner	Completed
ORR Seattle	Completed
ORR	need follow-up
Broglie	On-going
Nyr B	On-going
NMFS	Completed
James, Plummer	
Glackin	Completed
Schiffer, GC	Completed
PCO	Completed
ORR Seattle	Completed
Holst	Completed

Conner	OBE
Klimavicz, Akamine	On-going
NMFS, Rapp	On-going
Conner	Completed
NIST/Pedro Espina	
Holst, ORR	Completed
Madsen	Completed
	On-going
Winer	
Winer	Completed

NMFS	
Conner	Completed
Conner	Completed
Kenney	completed
OLA/NMFS	Completed
ORR	
Murawski	Completed
Bavishi	
Schiffer, GC	

Kennedy/Glackin/ORR	completed
NMFS	Completed/but continued engagement needed
Comms with JIC	On-going
Murawski/Thompson	
DWH, ORR	Completed
Sarri to follow-up with OMB, Klimavicz	
Gallagher/all staff	Completed
conner	in progress
NMFS	draft developed
NMFS	
ORR/Gallagher	
ORR/OAR/Gallagher	
ORR/Gallagher	
Gray, Bagley	
Taggart	Completed
Murawksi as lead, Zdenka,others	Completed
Oliver/Kenul	
Kenney/Westerholm/Conner	Completed
All staff	On-going

All staff	On-going
All staff	On-going
Yozell	On-going
NMFS	outstanding
Murawski and team	
McLean, Winer, Kennedy, Murawski	
Beaverson	
Kenul/westerholm	Completed
Murawksi and team	
ORR/ICC	
NMFS	
NMFS/ORR	
NMFS	
Dieveney/Kennedy	On-going
Dieveney/Westerholm/Miller	On-going
ORR-Seattle	
Dieveney/Winer team	

Sutter/Winer	
Yozell	
Westerholm/Henry	completed
NOS	On-going
Kennedy/Westerholm	outstanding
McLean/Winer/Bamford/Gray	
Miller with leadership	
Kenney	Completed
Murawski/Dieveney/leadership clearance	Completed
Haddad	Completed
Gray	
Tim Gallagher	
Tim Gallagher	completed
NWS	completed
Kenney/McLean	Completed
LO Leadership	
Murawski/Sandifer/Haddad, others	draft submitted 5/17
NMFS	Completed
HQ clearance	Completed
HQ clearance	outstanding
Murawski/McLean	
Kenney	
NMFS	
NMFS	
NMFS	
NMFS	
Sarri	
DWH Team with experts	completed
ALL	On-going
DWH Team	
DWH Team	
Kenney	underway

ALL	On-going
Conner/Kenney	review on-going
Oliver, Kennedy	Completed
Matlock, Murawski	
DWH Team	Completed
All, also particular to NOAA HQ	on-going
Taggart	
Kenney	
Turner/Reed with DWH Team	On-going
Gallagher	
NWS and ORR	in progress
Comms/DWH staff team	On-going
ICC RFI	
NWS/ORR	
ORR	completed
NWS/ORR	
ICC	
Kenney	Complete
Gray/Kenney (Dreyfus)	
(Rolfe at NIC/Westerholm)	
Kennedy	
Klimavicz	Completed
Comms/ NMFS	
policy/NIC	completed
Comms	completed
Science/Assets	
ICC/DWH staff	

Data & Information	
Science	
margaret spring	
comms	
Amy Merten	
DWH Staff	
DWH Staff	
NRDA / Penn	

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Outcome	NOTES
questions from WH	
Submitted through JIC process, not a NOAA product	
briefing to take place on 5/18	
http://www.charts.noaa.gov/ENCs/?M=D	
map is now created periodically showing all NOAA assets in the region	
map is now created periodically showing all NOAA assets in the region	
map is now created periodically showing all NOAA assets in the region	
Have one-pager with info for use	
one-pager developed and sent for clearance on 5/17	
being coordinated through Unified Command	
External Affairs team in place to support	
cleared and posted on-line	
request to engage UNH through the science summit proposal and engaging academic scientists	
complete and posted on-line	
requested by GC	
working on IPA	
BP not requesting	
BP not requesting	
5/7 version completed and available for use internally	
what is NIST concern?	
Birnea to travel 5/10 to review situation and develop a plan	
vendor AIRINC could also serve this role	
info sent to John Rapp for use	
completed, needs to be posted on-line	

Dr. L to call google colleagues to follow up www.google.com/crisisresponse/oilspill	
will be built into every days tps	
Experience tells me that the response would go on for 45-60 more days, but the oil will all be beached or dispersed within about 30	
Pedro to close loop with NOAA and DOI	
Need to have final Q&A	
On the guidance for volunteer issue, Caren and I are working with BP's volunteer coordination program coordinators to establish a protocol for providing information to BP about organizations that have volunteer resources and organizations in the Gulf that are capable of accepting volunteers. Based on my discussions, BP should be ready to discuss these protocols by Wednesday/Thursday, and we are planning a call with BP's volunteer coordinators and the external affairs working group organized by CEQ. In addition, the Fish and Wildlife Service and NOAA are working together to take the various lists of entities offering volunteers and organizations in the Gulf seeking volunteers and create a working document. After we determine the best way to interface with BP, we will likely send the document to JIC and get approval to share it with BP.	
there is a mechanism in place (LA Sea Grant), for which funds if available could always be added, other regional Sea Grants following suit. Sea Grant should be included in the suite of granting mechanisms engaged, but not be sole route	
To follow-up with Michele Finn to identify SSC or other to brief	
list sent to Justin on Sat. No known outcomes from Adm Allen phone call	

	Mussel Watch (John Christensen in NCCOS) is sampling for chemicals in shellfish along the coast to establish new base lines before oil hits and will be testing during and after spill hits shorelines. It is nation's longest continual water quality/shellfish monitoring program.
Determine that we could coordinate Federal participation on SCAT (as of 5/10/10: 4 out of Houma; 5 out of Mobile)	
analysis shows this is from Mississippi 252; likely sourced from initial blast	
sent with notice of confirmation of AS Dr. Larry Robinson	
Talking points cleared and delivered	
Analysis being done 5/10 by LUMCON, should have information today	NCCOS scientists (Rick Stumpf) on what red tides/ algae they have IDed in Gulf.
activities on-going to engage scientific community across NOAA and external partners	
call taking place on 5/12 (EPA, NOAA, DOI)	

Gary Matlock - intra-agency; Murawski - interagency; Sandifer - academic liaison	
NMFS has call today with State Directors	no specific criteria they are using NOAAs 3 day traj's like us
Disperants, Hurricanes, Seafood Safety, etc.	Dispersants (5/12)
NMFS text has been provided regarding fish closures and seafood safety	
contact made to DOC CFO to take action to follow-up with OMB to make a formal request of Randy Lyon, Randolph_M._Lyon@omb.eop.gov, and ask about a possible DOC leadership role perhaps through multi-agency coordination with SBA to explore further what is required for physical one-stop locations.	Deepwater Integrated Services Team led by Tracy Wareing, DHS, and Daniel Werfel, OMB. Leon Cammen, NOAA Sea Grant,
guidance distributed on 5/12	
Charlie Henry is trying to push forward with this using BP funding. He requested that Dave Kennedy support the concept to BP while he is in Louisiana. We should also start to support the idea in NRT calls and discussions with EPA.	
Meeting with OMB, DOC, and FDA Monday, 5/17	
FTEs in 5 regional states: 1400; within 20 miles of coastline: ~750	
activities on-going	
interview was canceled	
Contact: Justin Kenney (justin.kenney@noaa.gov), Scott Smullen (Scott.smullen@noaa.gov) and Jennifer Austin (Jennifer.austin@noaa.gvo).	

Office of Communication and External Affairs (Andy Winer: Andrew.winer@noaa.gov); Office of Legislative and Intergovernmental Affairs (john.gray@noaa.gov)	
send to Andrew.winer@noaa.gov and dwh.staff@noaa.gov	
meeting happening in region today: rachel sweeney, pat williams to participate on behalf of NMFS	
data received by NMFS on 5/17, in process	
(updated 5/14) WHOI scientists are capable of deploying instruments on one of the working ROVs. We discussed making multiple acoustic measurements to assess the degree of variability. This looks to be doable	NIST: Flow Metrology Group and the POC there is Pedro Espina (pedro.espina@nist.gov, 301-975-5444)
Regional meeting with all Sea Grant Directors scheduled for Monday, 5/17	
request for longer piece of video is still outstanding (5/17)	
Identify what other NOAA/academic assets has that are comparable; o Connect with Unified Area Command to determine needs and how needs could be met by other NOAA /academic assets	USCG is using contract vessel. No need for NOAA to reallocate the Gunther (reported on 5/17)
Request from WH Principals meeting on 5/14 - note that if more resources are needed we should ensure we have them	
Report for daily situation report	
Request from WH Principals meeting on 5/14; DoI requested to do same for birds	
Request from WH Principals meeting on 5/14 - note that if more resources are needed we should ensure we have them	
NOAA contacts at NIC: Mark Miller (mark.w.miller@noaa.gov); Ralph Lopez (ralph.lopez@noaa.gov)	

Has polled team for technical expert engagement (Miles Croom, Chris Doley, others)	
Contact made to NERR and ONMS on 5/14 for follow-up	
NOAA NIC contacts tracking this down today 5/14	
assessing additional full-time science staff	
Spring/NMFS(Reisner)/NOS (Westerholm and Kennedy)	
will be given to team on 5/18	
Proposal from Mark Miller: Discharge Rate technical team – potential participants: Dr. Bill Lehr, OAR (Dr. Ned Cokelet, PMEL); • Loop current team – potential participants: Dr. Jerry Galt, Dr. Rich Patchen (Environmental Assessment Group has also taken this issue on); • Subsea Dispersant Characteristics – potential participants: Dr. CJ Beegle-Krausen, Dr. Alan Mearns	
verified that the area in which the Pelican was working is within the closed area	
JIC cleared (5/17) OMB/WH pending	
Closing larger area of fishery will be announed 1300 today, in effect 1600 today	
Steve Wilson and Tim Hansen can serve this role	
press briefing on loop current conducted 5/18 at 1100.	
request out to Los to submit data every day	

contact Patricia Buckley (pbuckley@doc.gov) and Mark Doms (mdoms@doc.gov) for questions and cleared economic data	
determined product as is is not appropriate for public dissemination, conversations between D.Miller and Helton underway	
sent with notes from call	
updated document outlining leadership response structure	
Tick-Tock of NOAA assets on the ground developed (5/23)	
Jerry Galt identified to serve this role	
Have slide deck used for this press briefing	
Comments on plan postponed to noon 5/24	
NOAA's principal web engineers worked through this past weekend and are continuing to install additional hardware to allow this effort to become a reality. We are limiting access to this development/test portal to speed development. I thought we would be able to allow access to a few users to preview the site today, but given where we are with development, we will try to give some access tomorrow to NOAA leadership. Concerning the consolidated approach to Deepwater data, this development (public ERMA or GeoPlatform.gov) addresses the ability to integrate all of NOAA's data, as well as other Government agencies (DOI, EPA, DHS)	
comments submitted 5/25	

NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

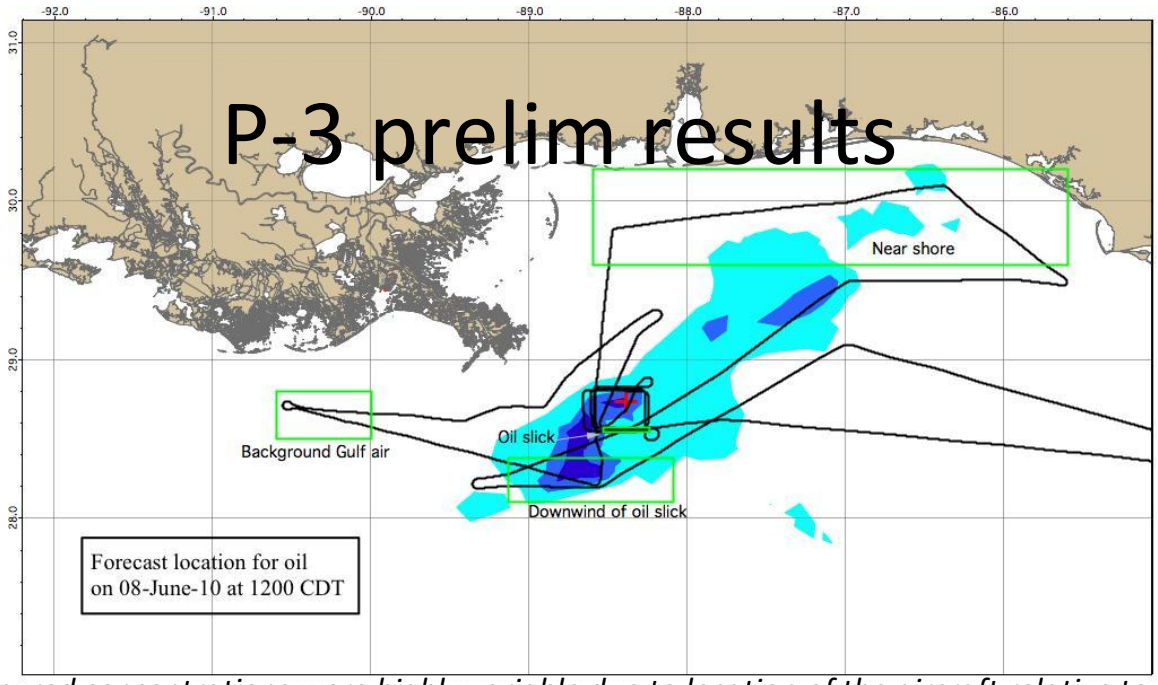
June 11, 2010

EXPERIMENTAL PRODUCT
** For Internal Use ONLY **

Topic Areas

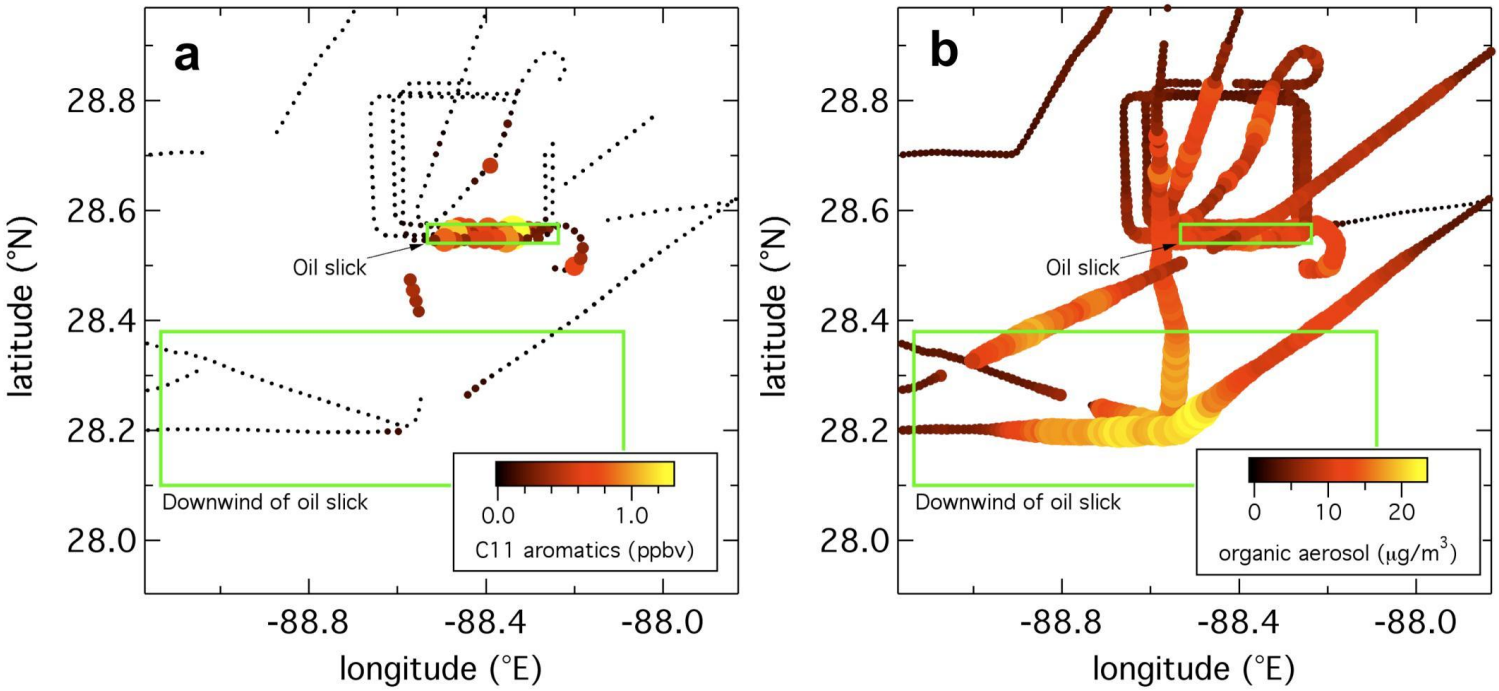
- P-3 preliminary results
- Loop Current Dynamics
- Protected Species Status
- Seafood Safety Sampling
- NOAA Assets
    - Planes, Vessels and Charters

P-3 prelim results



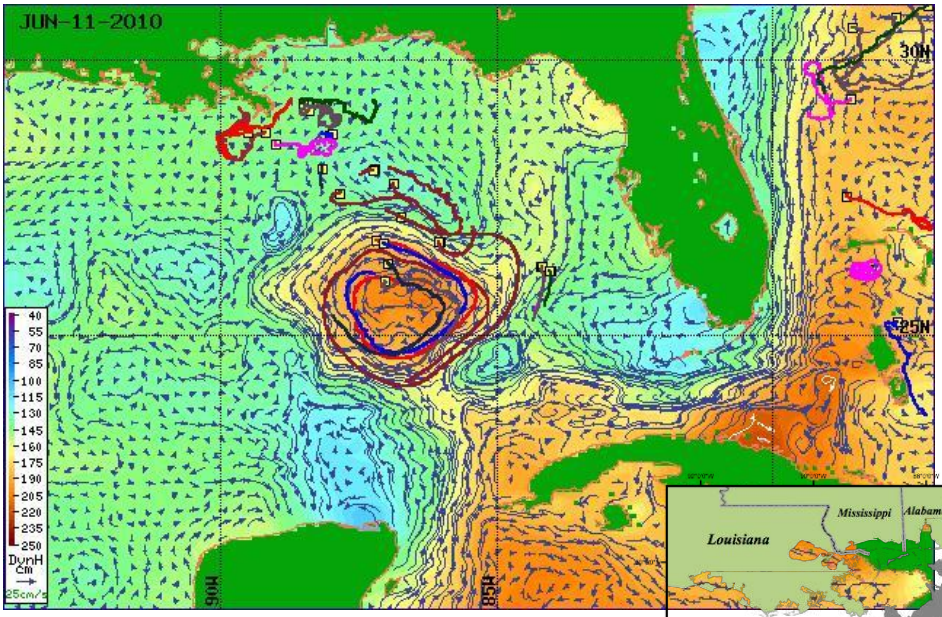
- *Measured concentrations were highly variable due to location of the aircraft relative to the oil spill, rate at which crude oil was being transported to the surface from the well, residence time of oil on surface, "aging" of species in the atmosphere, and meteorological conditions. The reported data are considered PRELIMINARY because there has been very little time to evaluate the data. Not all the species whose concentrations were measured are given in this report. The emphasis of this report is on chemicals believed to contribute to health impacts; however the aircraft was not equipped to measure a comprehensive suite of air toxics*
- ***MAJOR FINDING:*** **The ozone air pollution and the aromatic hydrocarbons from the Deep Water Horizon spill were mostly confined to the area around the site and fresh oil slick from the spill. In contrast, the aerosols (likely produced from hydrocarbons evaporating from the oil slick) were also present downwind.**

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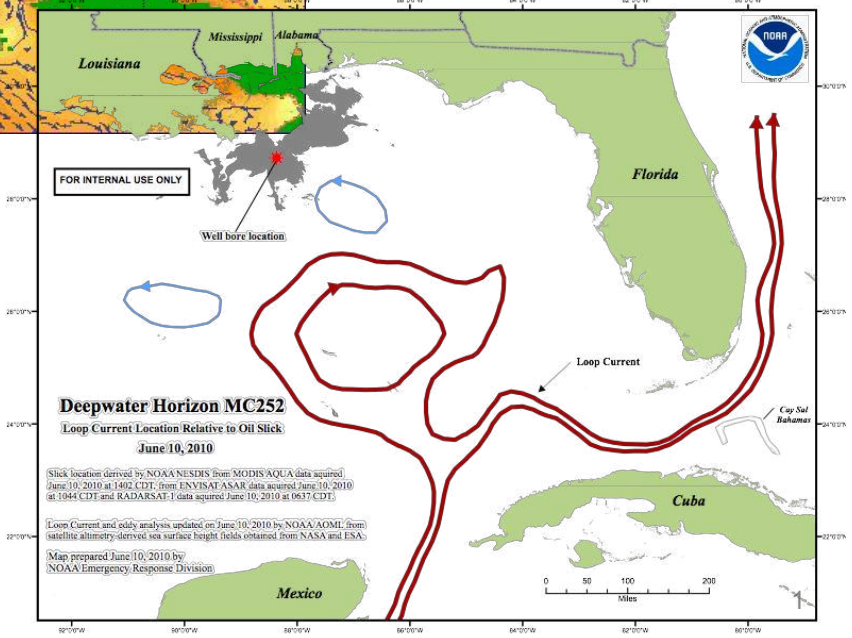


- Throughout the sampled region the concentrations of criteria pollutants- ozone, carbon monoxide, and nitrogen dioxide- were lower than the concentrations applicable under the National Ambient Air Quality Standards
- Directly over the oil slick, concentrations of all aromatic hydrocarbons and oxygenated volatile orgainc compounds (VOCs) were enhanced (Fig 2a)
- Downwind from the oil slick, the concentrations of aromatic hydrocarbons were reduced due to the combined effects of dilution and chemical removal, i.e. these species are chemically removed from the atmosphere with lifetimes of hours to days.
- South of Louisiana, the background Gulf air was relatively clean with all species close to their seasonal background concentrations.

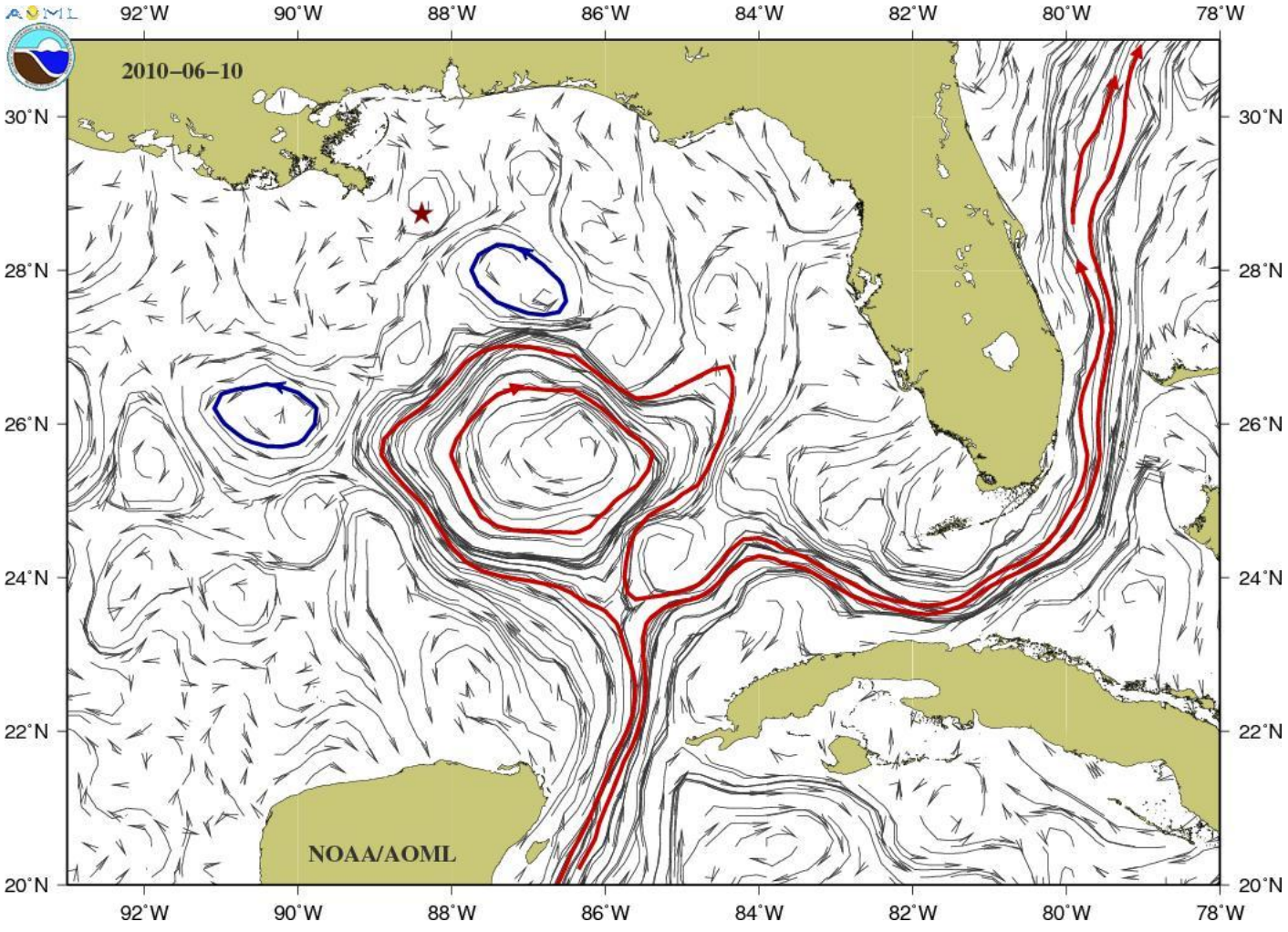
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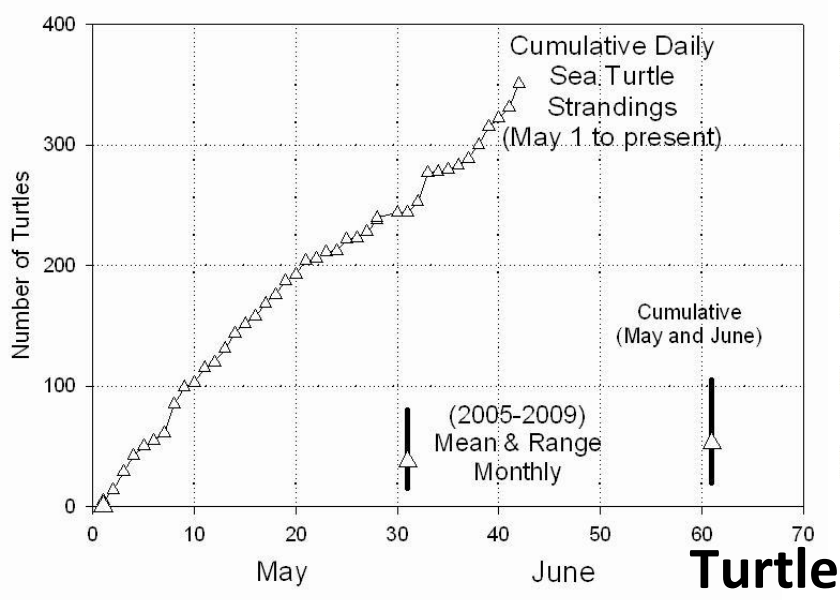
Loop Current Discussion
for June 11, 2010

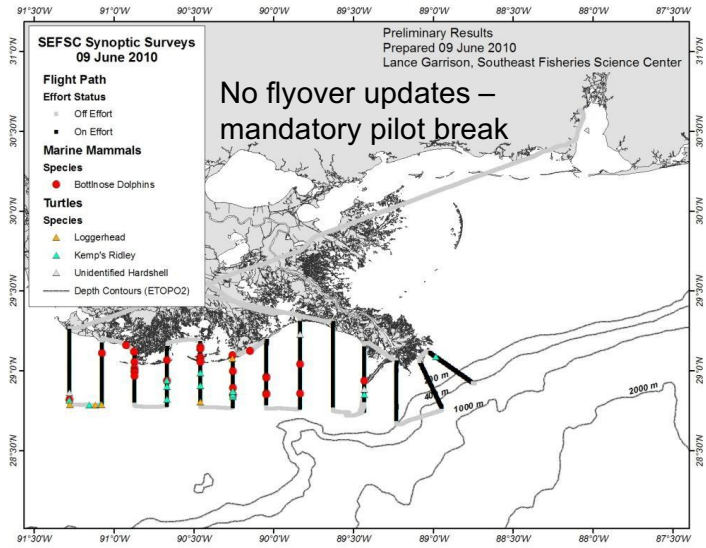


* The large loop eddy remains semi-detached from the Loop Current, with its outer edge interacting with the Loop Current while its core is in closed circulation. The small cyclonic (counterclockwise) vortex just south of 25 N, 85 W has become weaker over the last several days.
*Continued potential for reattachment in the next few days to weeks.
*With continued S-SE winds over the next several days, no significant quantities of oil are expected to enter the northern eddy or Loop Current.



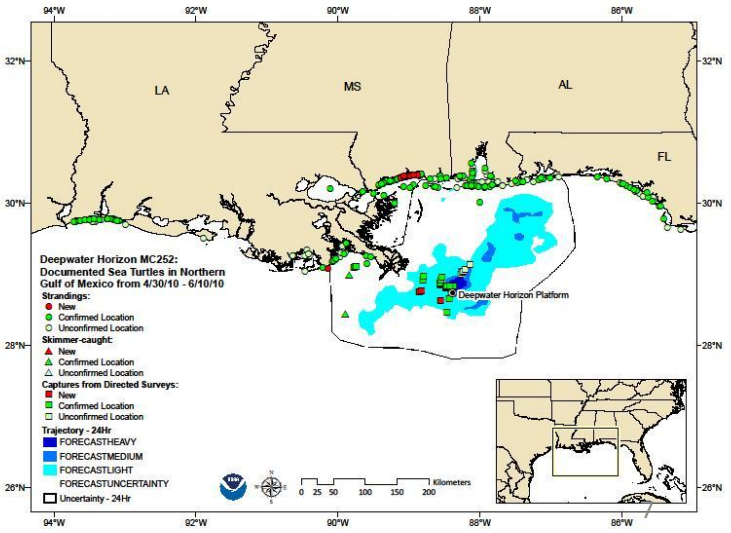
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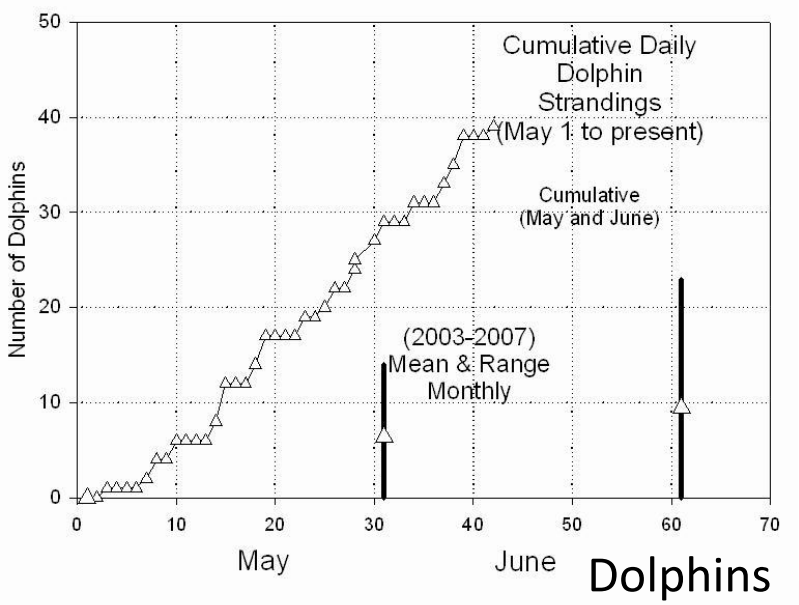


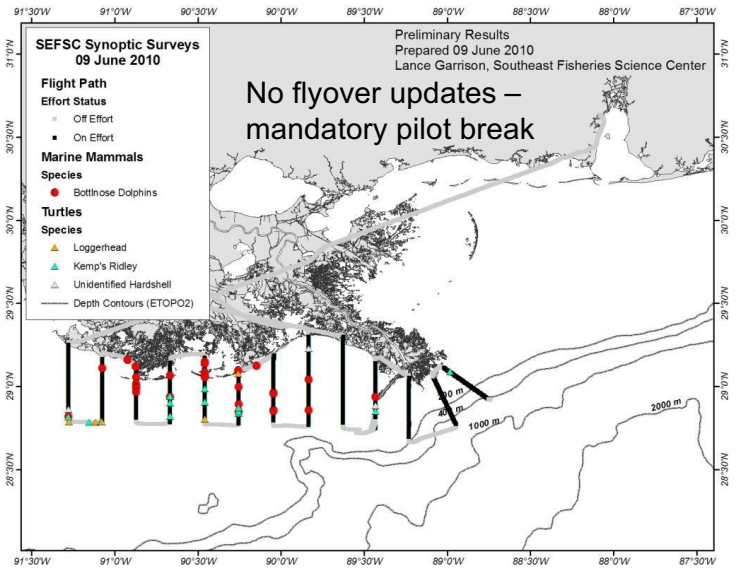


Turtles

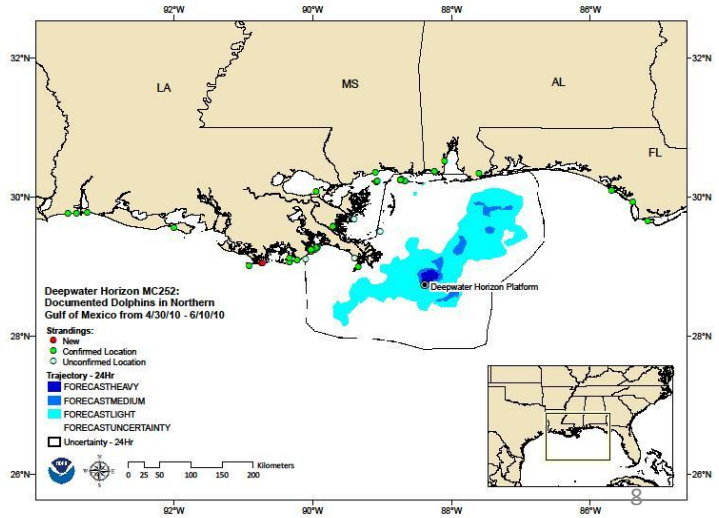
Turtle Status	
Total Verified Stranded Turtles	**351**
Total stranded turtles found dead	296
Total live stranded turtles currently in rehabilitation	45
Total live stranded turtles that died in rehabilitation	6
Total live stranded turtles released	4
Turtle Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	57
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	175



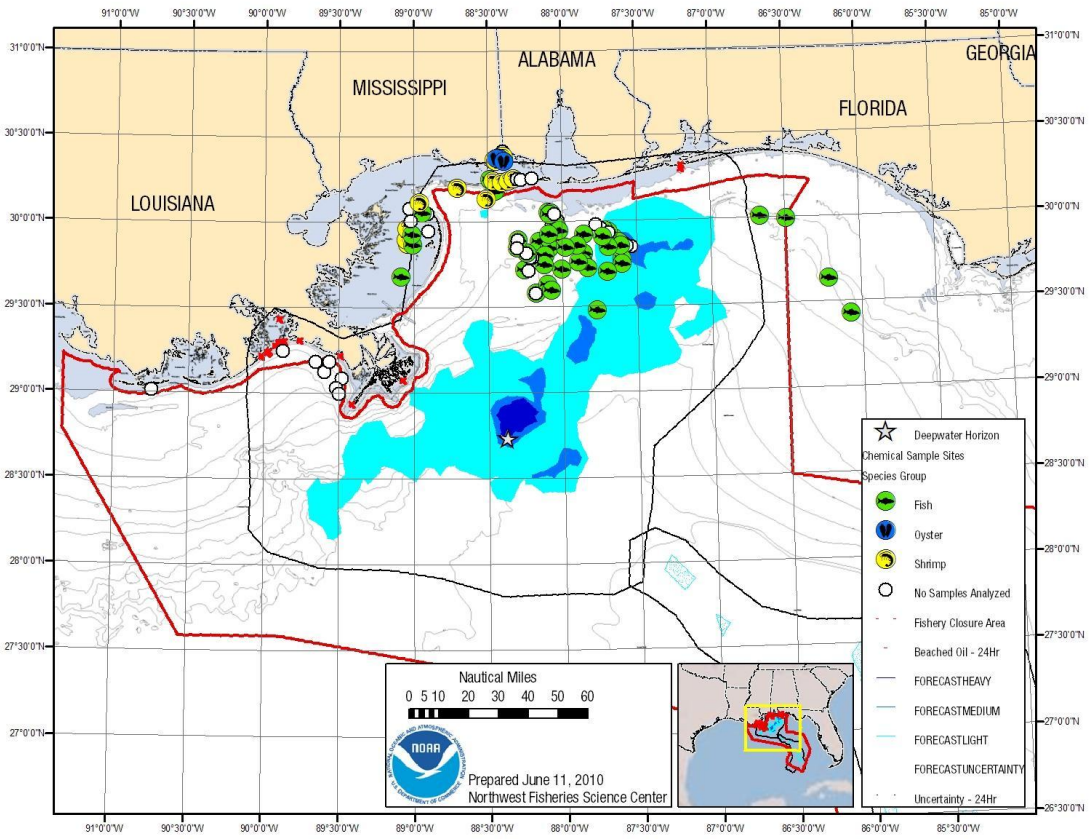




Dolphin Status	
Total Verified Dolphins	**39**
Total dead stranded dolphins	37
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	2
Total live released dolphins	0
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	14
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	8
Number of full necropsies performed	6
Verified strandings but animals not collected due to stage of decomposition or unable to recover	9
Carcasses to be necropsied, if decomposition stage warrants	2



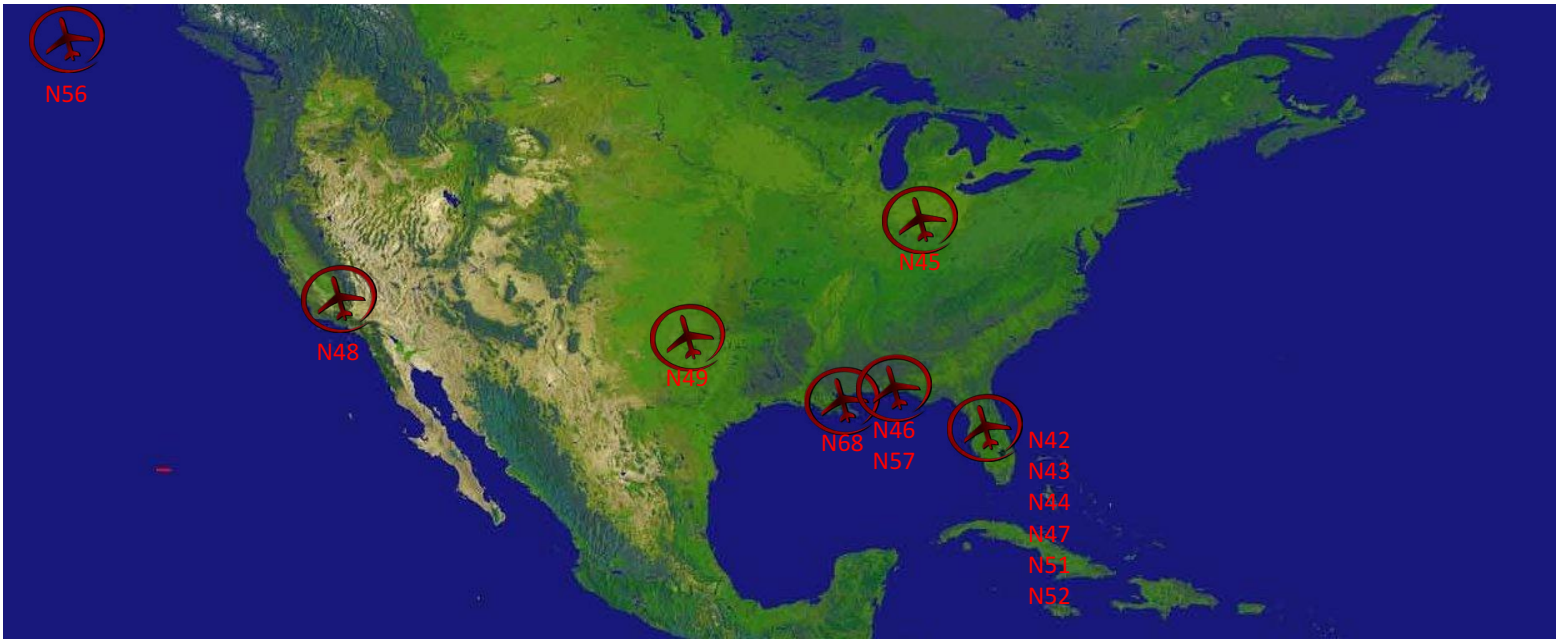
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June 11, 2010

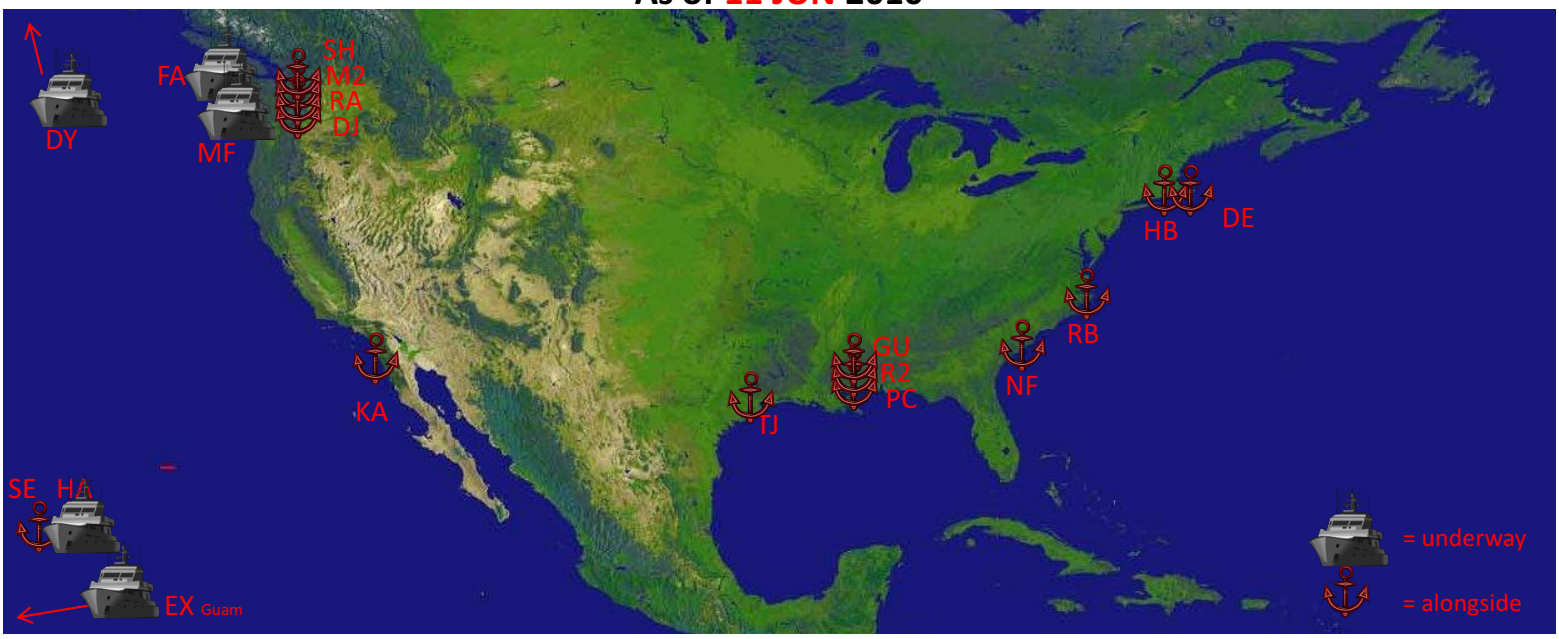
- 152 samples of fish and shellfish collected in the Gulf arrived at the NWFSC yesterday. These samples are being processed and will undergo analysis early next week.
- GC/MS analysis of 24 fish and shellfish composite samples were completed this week and are undergoing QA/QC review.
- Chemical analysis is underway for 13 shrimp samples (composites).

NOAA Aircraft Positions
As of 11 JUN 2010



ID	Type	Status Today
N42	P-3	Loop Current Flight, MacDill AFB
N43	P-3	Repo to Ontario, CA for CALNEX, MacDill AFB
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Maintenance, Indianapolis, IN
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, down day crew rest, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Ontario, CA
N49	G-IV	Tail Doppler Radar install/testing, Ardmore, OK
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Homer, AK.
N57	Twin Otter	DWH marine survey , Mobile, AL
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

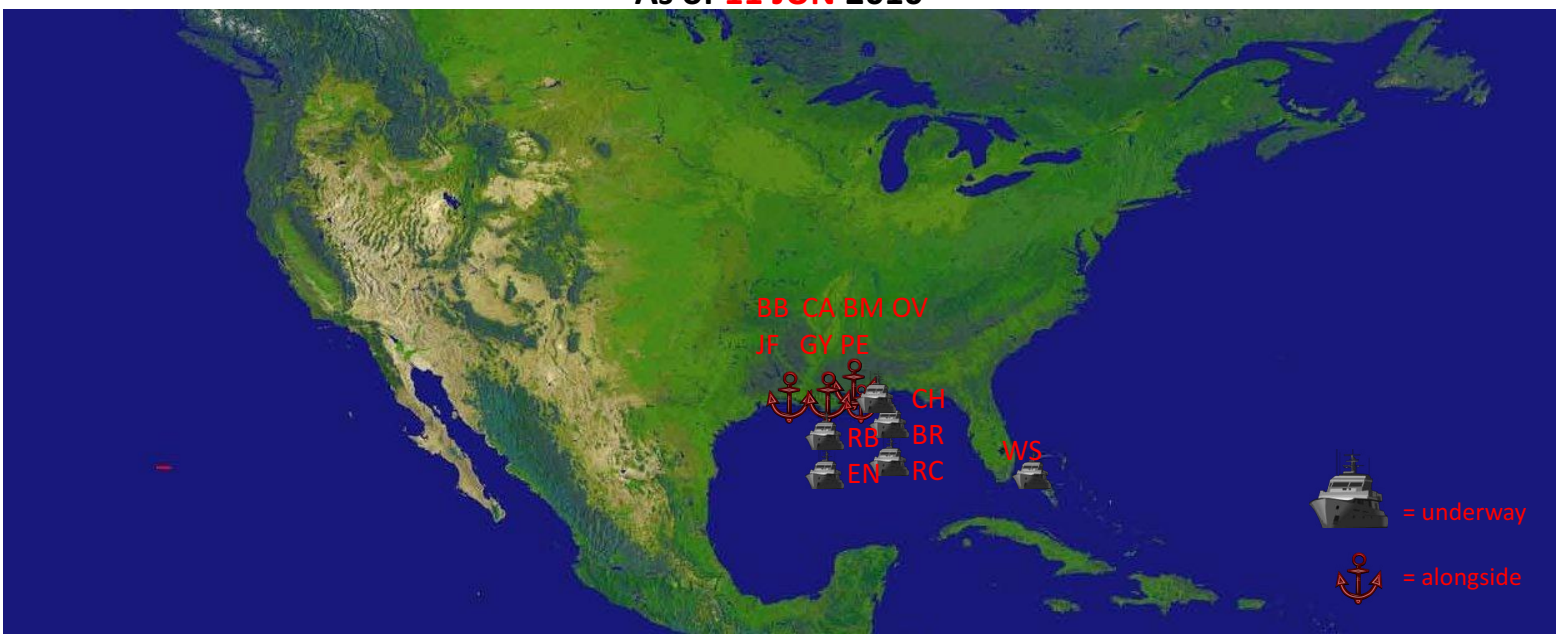
NOAA Ship Positions
As of 11 JUN 2010



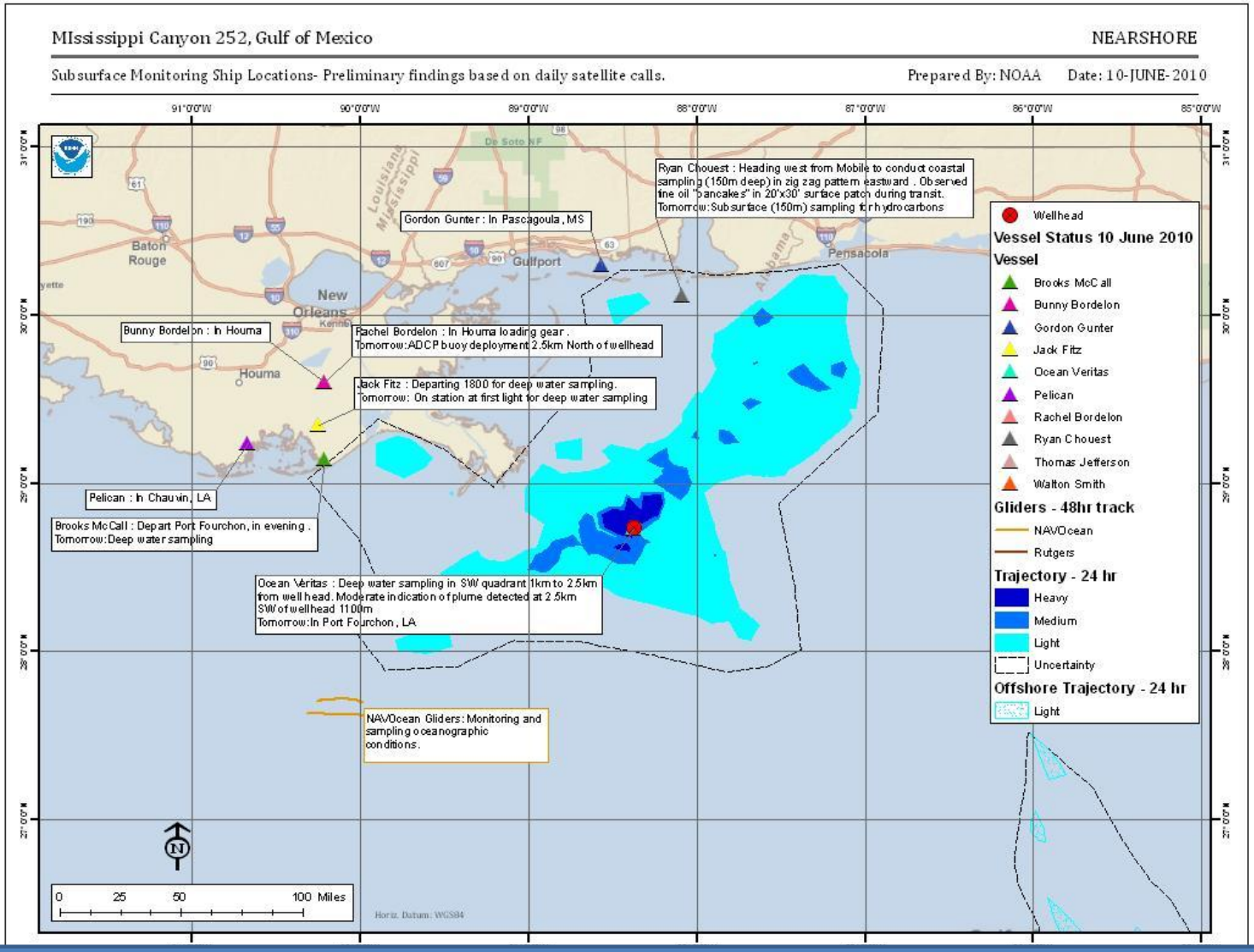
ID	Status Today
FA	Underway on scheduled project. Arrival 6/18 Port Angeles, WA
SH	Alongside Seattle, WA. Departure 6/25 for scheduled project
MF	Underway on scheduled project. Arrival 6/15 Newport, OR
DY	Underway on scheduled project. Arrival 6/24 Dutch Harbor, AK
HA	Underway on scheduled project. Arrival 6/11 Pearl Harbor, HI
M2	Alongside Seattle, WA. Departure 6/10 for scheduled project
SE	Alongside Pearl Harbor, HI. Departure 7/6 for scheduled project
KA	Alongside San Diego, CA. Departure 7/8 for scheduled project
RA	Alongside Cascade, OR for shipyard repair period
DJ	Alongside Seattle, WA. Decommissioning on week of 7/26
EX	Underway on scheduled project. Arrival TBD, pending Indonesian clearance

ID	Status Today
DE	Alongside Woods Hole, MA. Staging for transit to GoM for DWH ops (seafood study)
TJ	Alongside Galveston, TX. Departure 6/15 for continued DWH ops (acoustics and water sampling)
HB	Alongside Newport, RI. Departure 7/6 for scheduled project
NF	Alongside Charleston, SC. Departure delayed to ~6/23 following repairs
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Alongside Pascagoula, MS. Departure 6/14 for scheduled project (mammal survey shifted to GoM due to DWH)
PC	Alongside Pascagoula, MS. Departure 6/14 for DWH ops (seafood study
R2	Alongside Pascagoula, MS. Departure 6/16 for sea trials

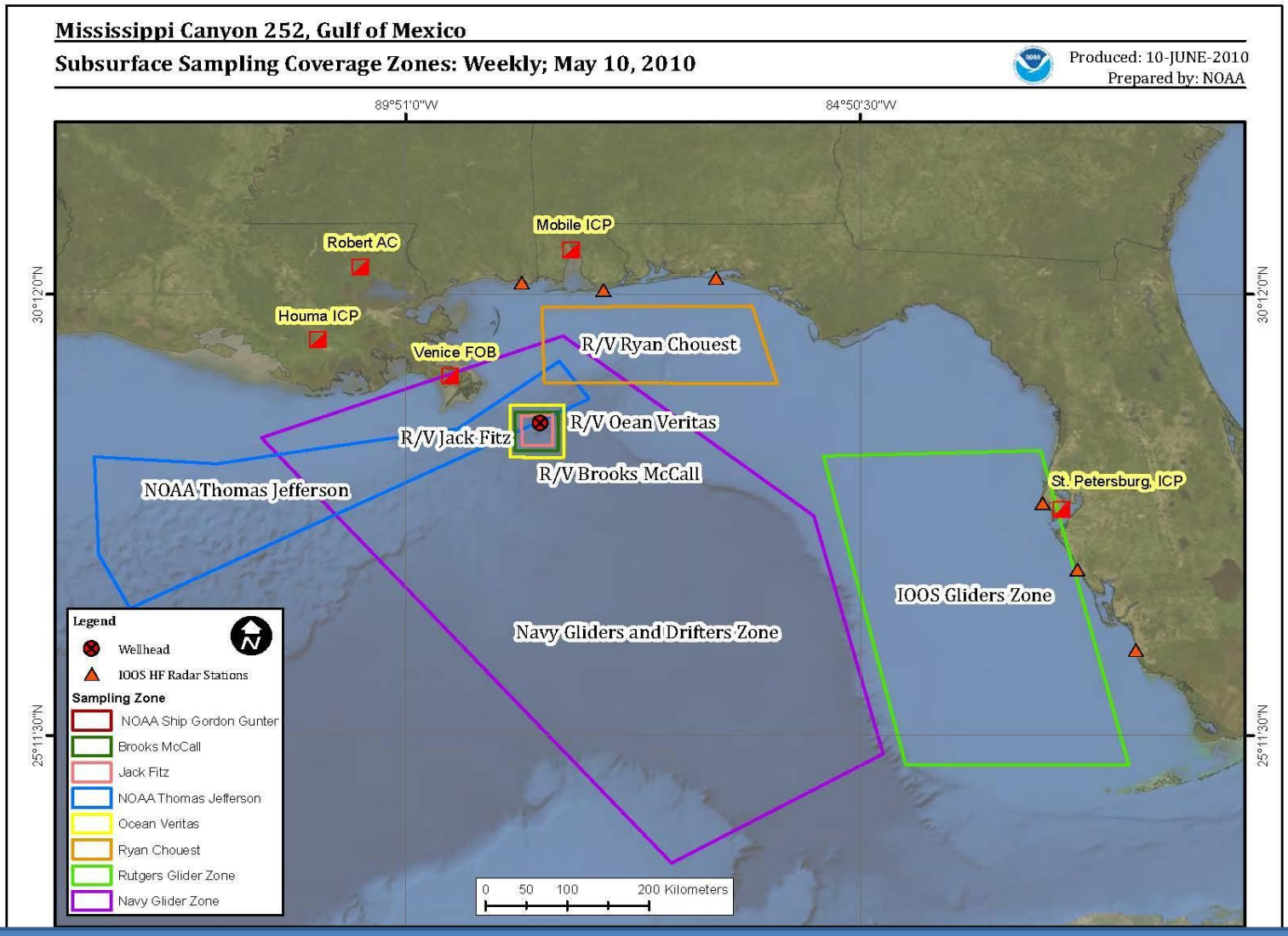
Chartered Vessels and NOAA Small Boats
As of 11 JUN 2010



ID	Type	Status Today
BR	F/V Beau Rivage	Fisheries baseline sampling off of FL
BM	R/V Brooks McCall	Deep water sampling W of wellhead, moving N
BB	M/V Bunny Bordelon	Inport Houma
CH	R/V Cape Hatteras	Arriving Gulfport, MS
CA	R/V Caretta	NOAA Small Boat alongside Pascagoula. DWH begin 21 June
EN	R/V Endeavor	Transit to FL
GY	R/V Gandy	Inport Pascagoula for mechanical problems. Return to operations estimated 14 June
JF	R/V Jack Fitz	Departing 1800 for deep water sampling
OV	R/V Ocean Veritas	Inport Fourchon
PE	R/V Pelican	Inport Chauvin, LA
RB	M/V Rachel Bordelon	ADCP mooring deployment 2.5km north of wellhead
RC	R/V Ryan Chouest	Continuing coastal sampling (150m depth) westward then redirecting eastward
WS	R/V Walton Smith	Transit to Miami, FL



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations

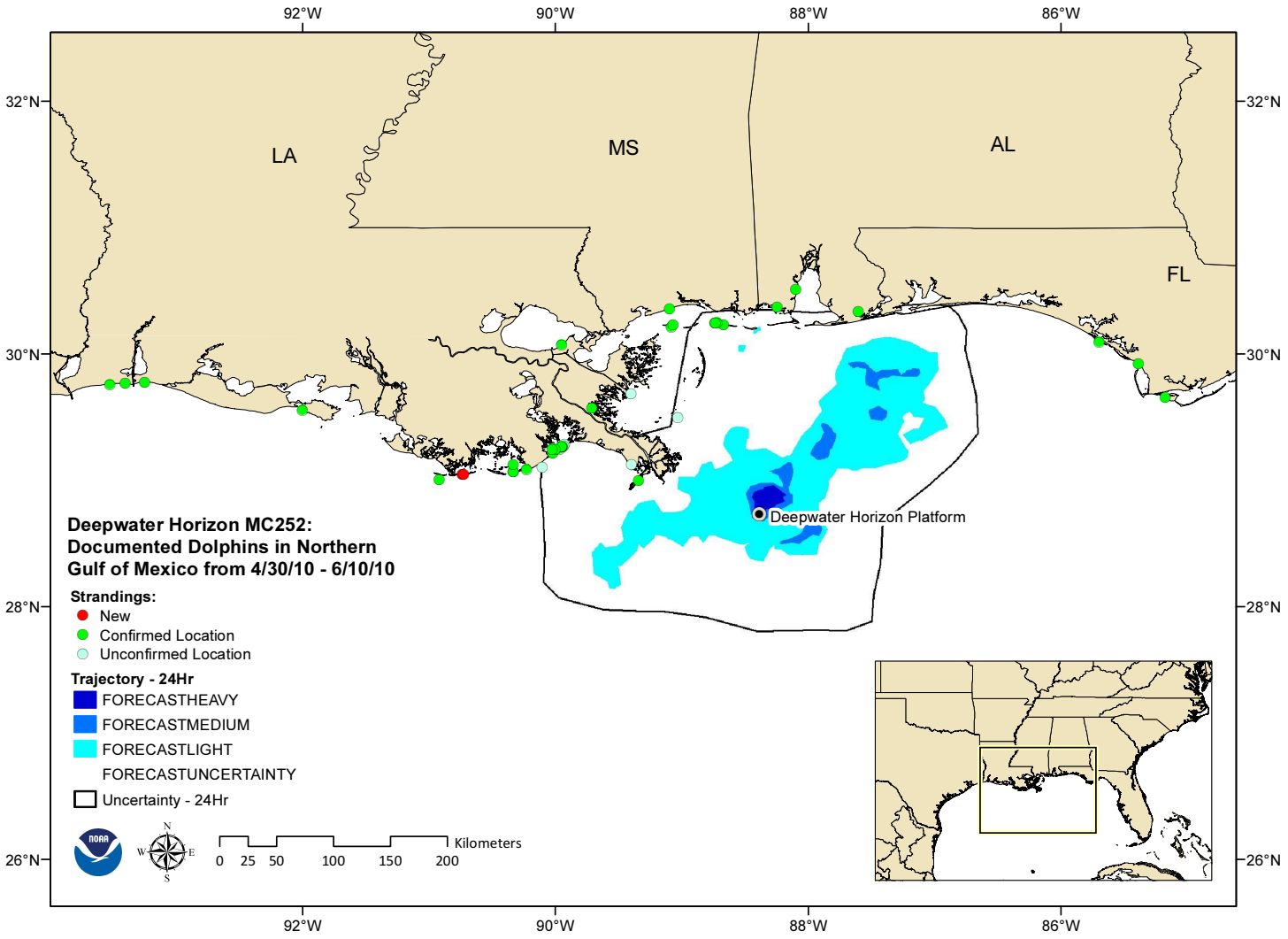


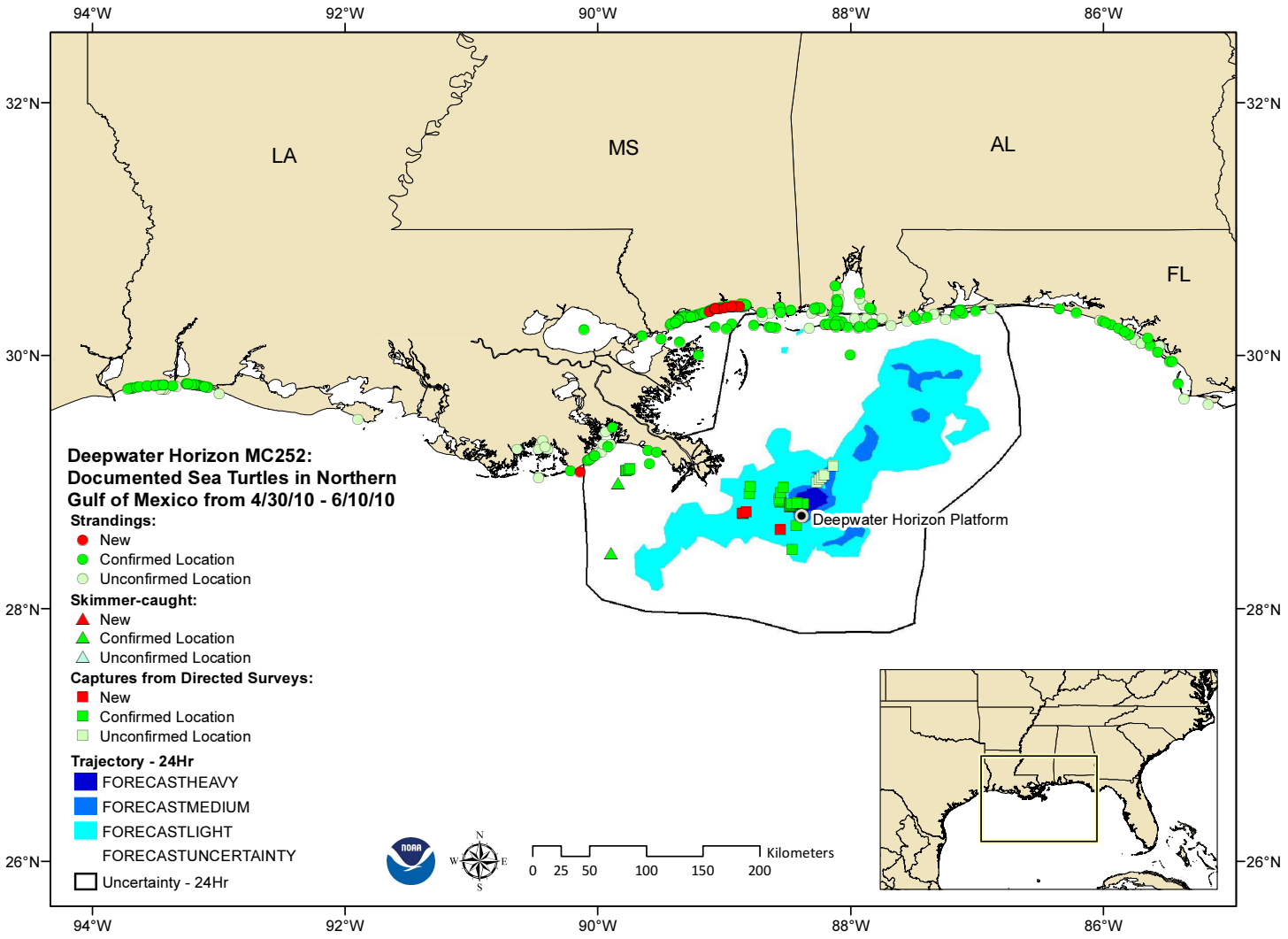
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Vessel Assignments for June 11-13, 2010

Vessel	Type	Compliment	Latitude	Longitude	Operations for June 11	Operations for June 12	Operations for June 13	Findings
Beau Rivage	109 ft F/V	6			Fisheries baseline sampling off FL coast	Fisheries baseline sampling off FL coast	Fisheries baseline sampling off FL coast	
Brooks McCall	162 ft ROV Ops	32	28 43.5N	88 24.8W	Deep water sampling W of wellhead, moving N	Deep water sampling	Deep water sampling	No indication of subsurface oil, small dissolved oxygen dip at 900m west of well head
Bunny Bordelon	150 ft OSV	16	29 35.9N	90 12.8W	In Houma	In Houma	In Houma	
Cape Hatteras			30 22.0N	89 05.5W	Arriving Gulfport, MS	In Gulfport, MS	Departing for Methane sampling	
Endeavor	185 ft				Transit to FL	Transit to FL	Transit to FL	
Gordon Gunter	224 ft R/V	33	30 18.0N	88 34.0W	In Pascagoula, MS	In Pascagoula, MS	In Pascagoula, MS	
Jack Fitz	165 ft OSV	26	29 20.9N	90 14.8W	Departing 1800 for deep water sampling	On station at first light for deep water sampling	Deep water sampling	Awaiting equipment delivery
NAVOcean Sea Gliders	2 AUV's				Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	
Ocean Veritas	194 ft M/V	41	29 08.6N	90 12.8W	In Port Fourchon	In Port Fourchon, LA	In Port Fourchon, LA	Indication of subsurface plume detected yesterday 3km SW of wellhead, weaker indication out to 5.5 km W of wellhead
Pelican	116 ft R/V	16	29 14.3N	90 40.2W	In Chauvin, LA	In Chauvin, LA	In Chauvin, LA	
Rachel Bordelon	150 ft	20	28 48.0N	88 52.5W	ADCP mooring deployment 2.5km north of wellhead	In Houma, LA	In Houma, LA	
Rutgers and USF gliders	3 AUV's				Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	
Ryan Chouest	215 ft OSV	27	29 12.0N	88 00.0W	Continuing coastal sampling (150m depth) westward then redirecting eastward	Subsurface (150m) sampling for hydrocarbons	Subsurface (150m) sampling for hydrocarbons	Large surface patch of oil sighted last night, no subsurface hits reported
Thomas Jefferson	208 ft R/V	33	29 20.4N	94 45.6W	Arriving in Galveston, TX	In Galveston, TX	In Galveston, TX	
Walton Smith	96 ft R/V	19	25 47.2N	80 13.0W	Arriving in Miami, FL	In Miami, FL	In Miami, FL	

https://www.st.nmfs.noaa.gov/confluence/display/OOP/Daily+Vessel+Call+Notes


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/10/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
N
W
E
S
0 25 50 100 150 200
Kilometers


94°W
92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/10/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
N
W
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0 25 50 100 150 200
Kilometers

Update through June 10 2010 (as of 1800)

Marine Mammal and Sea Turtle Health and Response

Noteworthy Developments During this Reporting Period:

- Increase of 16 turtle strandings, all dead (15 dead in MS, 1 dead in LA)
- Increase of 4 oiled turtles captured during directed on-water search efforts (3 live, 1 dead)
- Increase of 1 dolphin stranding (1 dead in LA, reported on June 9 and verified on June 10)
- The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.

Sea Turtles:

351 total sea turtles verified to date within the "designated spill area" (increase of 20 from June 9 report)

- 317 stranded* (increase of 16 from June 9)
    - 293 of the stranded were found dead (increase of 16 from June 9)
    - 24 of the stranded were found alive (no change from June 9)
        - 3 recovered alive but died in rehab (no change from June 9)
        - 4 turtles released alive (no change from June 9)
        - 17 live turtles in rehabilitation (no change from June 9)
- 34 turtles collected during directed turtle sampling efforts (increase of 4 from June 9)
    - 28 live turtles in rehabilitation (increase of 3 from June 9)
    - 3 turtles collected dead (increase of 1 from June 9)
    - 3 turtles died in rehabilitation (no change from June 9)

* For this event, a true turtle stranding is defined as a turtle that washes ashore dead or debilitated or is found floating dead or debilitated in the course of non-directed turtle surveys. Turtles observed and/or captured during directed sampling efforts are not categorized as strandings.

Turtle Necropsy Status (of the 293 dead stranded, 3 dead directed capture, and 6 that died in rehab):

- 7 assessed and unable to perform necropsies (i.e. advance decomposition) (no change from June 9)
- 17 partial necropsies (e.g. due to scavenging or autolysis) (no change from June 9)
- 57 full necropsies performed (increase of 1 from June 9)
- 46 carcasses not collected due to decomposition state or unable to recover but marked and/or buried (no change from June 9)
- 175 carcasses to be necropsied, if decomposition stage warrants (increase of 16 from June 9)
- Of the initial 73 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

Information on Signs of Sea Turtle Oiling:

Document ID: 0.7.19.2162.7

- To date, visible evidence of oil has been documented externally on 4 dead stranded sea turtle and 4 live stranded turtles (2 of which were caught in skimming operations).
- To date, visible evidence of oil has been documented externally on 31 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

Historical Sea Turtle Strandings:

- The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-10 is 65.
- This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. The breakdown by state for the range of animals historically stranding in the month of June (2005-2009) is as follows:
    - Louisiana: 0-3 stranded sea turtles
    - Mississippi: 0-1 stranded sea turtles
    - Alabama: 0-4 stranded sea turtles
    - Florida panhandle (Escambia – Wakulla Co.): 5-17 stranded sea turtles
- There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.

Marine Mammals:

- 39 dolphins have been verified to date within the "designated spill area" (increase of 1 from June 9).
    - 37 were dead stranded* dolphins (increase of 1 from June 9)
    - 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding (no change from June 9)

* Under the Marine Mammal Protection Act Section 409.3, a marine mammal stranding is defined as an event in the wild where:

- A marine mammal is dead and is on the beach or shore of the United States or in waters under the jurisdiction of the United States (including any navigable waters); OR
- A marine mammal is alive and is on a beach or shore of the United States and unable to return to the water, on a beach or shore of the United States and, although able to return to the water, is an apparent need of medical attention or in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance.

Dolphin Necropsy Status (of the 37 dead stranded and 2 live stranded that died or were euthanized):

- 14 assessed and unable to perform necropsies (e.g. advanced decomposition) (increase of 1 from June 9)
- 8 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 9)
- 6 full necropsies performed (no change from June 9)
- 9 verified strandings but animals not collected due to stage of decomposition or unable to recover (no change from June 9)

Document ID: 0.7.19.2162.7

- 2 carcasses to be necropsied, if decomposition stage warrants (no change from June 9)
- Necropsy results are pending for all animals necropsied to date.

Information on Signs of Dolphin Oiling:

- Two of the verified dolphins have evidence of external oil on the tongue and/or body and therefore were classified as oiled. However, we are unable at this time to determine whether the animal was externally oiled pre- or post-mortem.

Historical Dolphin Strandings

- The total number of dolphin strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-10 is 10.
- This is higher than the number of marine mammal strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. In part, this may be a reflection of increased detection and reporting and the lingering effects of an earlier observed spike in strandings for the winter of 2010.
- The breakdown by state for the range of animals historically stranding in the month of June (2003-2007) is as follows:
    - Louisiana: 0-5 stranded dolphins
    - Mississippi: 0-1 stranded dolphins
    - Alabama : 0-1 stranded dolphins
    - Florida panhandle: 0-4 stranded dolphins

<u>Summary of Action Plan Items:</u>

- The directed turtle survey managed by the Marine Mammal/Sea Turtle Unit was on the water today, and 3 live and 1 dead oiled turtles were collected. Directed surveys will not be undertaken on June 11 due to weather and vessel logistics.
- Due to the documented presence of manatees in Mobile Bay and shoreline oil in the area, an aerial survey under the Wildlife Branch to assess the risk to these animals was flown today. Two airplanes flew simultaneous surveys, one in Alabama and one in Mississippi/part of Louisiana. Only one potential manatee was observed; due to water clarity it could not be confirmed. However, 80 dolphins were seen, including one group of about 20 animals, and 2 sea turtles (both loggerheads) were also documented.

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Seafood Safety Daily Report
Reported from Seafood inspection Program, National Seafood Inspection Laboratory and Northwest Fishery Science Center
Friday, June 11, 2010

Seafood Inspection Program:

- Preparing to host a third training for State sensory assessors to begin next week in Pascagoula, MS.

Northwest Fishery Science Center (NWFSC):

- Three NWFSC staff are returning from Pascagoula after assisting NSIL staff in processing fish and shrimp for chemical analyses. Three other staff will depart for Pascagoula on Sunday 6/13.
- NWFSC is continuing chemical analysis of oyster, shrimp, snapper and croaker tissues.

National Seafood Inspection Laboratory

- Manually generated & QA-ed following seafood sample status summary from sample status spreadsheets and related documentation.
- Setting up database management and programming necessary to generate daily summaries of seafood samples status.
- Hosting SIP Sensory Analysts and NWFSC staff.
- Working out logistics with SEFSC on determining which seafood samples are baseline and which are from closed areas. This is necessary for reporting purposes.
- Working out logistics with SEFSC on obtaining GIS mappings of sampling locations vs. cruise tracks in order to improve sample management and processing.

Metrics:

As of COB June 10, 2010:

- Total Number of Stations Sampled-- 154
    - Number of Baseline Stations -- 124
    - Number of Sensory Stations -- 30

Received(Date): Sat, 12 Jun 2010 08:10:17 -0400
From: ICC.Deputy@noaa.gov
Subject: DEEPWATER HORIZON - morning reports
To: Deepwater.HorizonDist@noaa.gov
Deepwater_Horizon_Report_55.pdf
forecast_20100614_1200CDT_20100611_2100CDT_rs.pdf
landfall6_11_complete.pdf
LoopCurrentMap-6-11.pdf
LoopCurrentStatus-6-11-1.pdf
os_forecast_20100614_1200CDT_20100611_1900CDT_rs.pdf

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ICC Deputy on Watch

NOAA Emergency Response Division (ERD)
Report # 55: June 11, 2010 at 2100 PDT
MC 252 DEEPWATER HORIZON Incident, Gulf of Mexico, Major Spill Incident

Situation Update, Day 53:

Overview: The amount of oil being collected via the 'top hat' operation was approximately 15,400 gallons in the latest 24hr operation period. The transfer of crude oil from the drillship to the barge Massachusetts, a process known as lightering, began the morning of June 9. The operation should be completed by tomorrow morning and the barge will transport the oil for discharge at an onshore terminal. Late this month, BP intends to increase surface processing capacity by re-plumbing the top hat system so it can be routed to tankers. BP is moving forward with connecting risers to ports on the side of the blow-out preventer. The risers will be connected to the rig used in the 'top kill' procedure. The operation is expected to collect 5,000-10,000 additional barrels of oil per day.

BP is also continuing efforts to connect a new free-standing riser to the top hat. The new riser will connect to the containment cap on the well, and will be held in the water by a canister suspended about 300 feet beneath the water's surface. This system should be ready by next month and will allow the surface collection ship to disconnect if a hurricane threatens it and reconnect once the storm passes.

There is a total of 24,000 staff currently working to support response efforts in the field. The staff is supporting a wide range of functions including oil clean-up operations, natural resource damage assessment, source control, and seafood safety.

Trajectories:

Onshore (SE/S/SW) winds are forecast to continue into next week at speeds <10 knots. Persistent onshore winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands and the Florida panhandle. Coastal regions in Mississippi Sound west of Freeport, FL may continue to experience shoreline contacts. Persistent southeasterly winds are also resulting in movement of oil towards the Chandeleur Islands, Breton Sound, and the Mississippi delta and shoreline oiling is possible.

Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy that has pinched off the main Loop Current (LC). Trajectories indicate that some of these sheens may continue southward along the eastern edge of main eddy, whereas some may be getting entrained into the counter-clockwise eddy to the NE of the main LC eddy. A USCG/NOAA overflight off the west coast of Florida today saw noncontiguous sheens along the northeastern section of the main LC eddy.

Hot Topics:
Alabama Heavy Oiling: Alabama today experienced its heaviest oiling since the start of the spill. A heavy band (2-3 ft wide) of red-brown oil was observed at the high tide line on along 8-10 miles of shoreline in the Bon Secour National Wildlife Refuge, AL. The refuge sits at the mouth of Mobile Bay and contains 7,000 acres of wildlife habitat for migratory birds, nesting sea turtles and the endangered Alabama beach mouse. As more oil reaches shore, various shoreline protection strategies are being attempted.

Flow Rate Estimates: The new flow rate estimates released by the NIC yesterday have heightened concerns about environmental and economic impacts. The new estimates are the consensus of the NIC Flow Rate Technical Group (FRTG) and put the release rate at 25,000-30,000 barrels/day (pre-riser cut). This release rate equates to more than 1 million gallons/day, and this is day 53 of the spill. The FRTG plume team is working on post-riser cut flow estimates (flow rate before the 'top hat' was engaged) and like BP's engineers, expect estimates will be higher than the pre-cut estimates.

ORR Staffing: ORR is working diligently to meet long term staffing needs for SCAT, NRDA, GIS, data management, and other key roles. We have received a number of responses to calls for assistance from NOAA, DOI, universities, States, and contracting companies and are working to identify funding vehicles as needed. Many of the staff require SCAT or other training in order to fill the necessary requirements and we are sharing materials and setting up training sessions as quickly as possible. This week, we completed a SCAT training session and several new aerial observers were trained in oil observation.

Submerged Oil: While NOAA continues to investigate the extent and concentration of the submerged oil, ORR is also performing a Resources at Risk assessment for depths between 1000-1400m. This RAR will contribute to NRDA and improve our understanding of potential impacts of oil at these depths. In addition, NOAA, EPA, and BP recently released plume monitoring protocols and procedures guidance for research cruises.

Loop Current and Long Term Trajectories: NOAA continues to work with OMB to get approval to release to the general public long-term oil projections and a Loop Current image created daily by ORR oceanographers. This information, in combination with ORR trajectory forecast maps, would give the public a much better understanding of circulation patterns and how and where the oil is and may be moving in the future. A number of East Coast senators recently sent a letter to NOAA requesting long-term oil trajectories so that they could plan accordingly for their state. Hopefully this request will expedite the review and release of this information.

PRFA status update:

Seafood Safety	Approved
Thomas Jefferson / WHOI cruises for mapping sub surface areas west of the Mississippi Delta for potential hydrocarbons and dispersants	Approved
Gordon Gunter and Weatherbird II Cruises	Approved verbally, working on obtaining written documentation from FOSC
HF Radar	Being reevaluated by modelers for

	resubmission for funding, likely directly to BP.
Recreational Fishing	ORR and NMFS are pursuing the rec. fishing assessment as a NRDA study
Remote Sensing Activities by NGS	In review by SSC.
OR&R base increase to $7.7 million	Under USCG consideration

NOAA Roles: Many personnel are on scene and many more are engaged remotely. Additional NOAA assets are being made available for the spill.

Office of Response and Restoration (OR&R)

- Scientific support to the U.S. Coast Guard and Unified Command

Emergency Response Division (ERD)

- Predict oil fates and effects
- Overflight observations and mapping
- Identify resources at risk
- Recommend appropriate clean-up methods
- Manage data and information

Assessment and Restoration Division (ARD)

- Plan for assessment of injuries to natural resources
- Coordinate with state and federal trustees

National Weather Service

- Incident weather forecasts including marine and aviation

National Environmental Satellite, Data, and Information Service (NESDIS)

- Experimental imagery for spill trajectory forecasts
- Data Visualization

National Marine Fisheries Service (NMFS)

- Issues related to marine mammals, sea turtles, and fishery resources
- Public Affairs support to the Joint Information Center

Office of Marine and Aviation Operations (OMAO)

- USCG Liaison to the DCO Incident Support Team USCG Headquarters
- Aircraft and vessel support

Oceanic and Atmospheric Research

- Oceanographic and atmospheric modeling and data support.
- Gulf of Mexico Sea Grant programs providing technical advice on impacts to living resources and coastal communities.

National Ocean Service

- Support from ONMS for staffing and technical information
- Oceanographic modeling support
- Public Affairs support to Joint Information Center

Nearshore Surface Oil Forecast Deepwater Horizon MC252

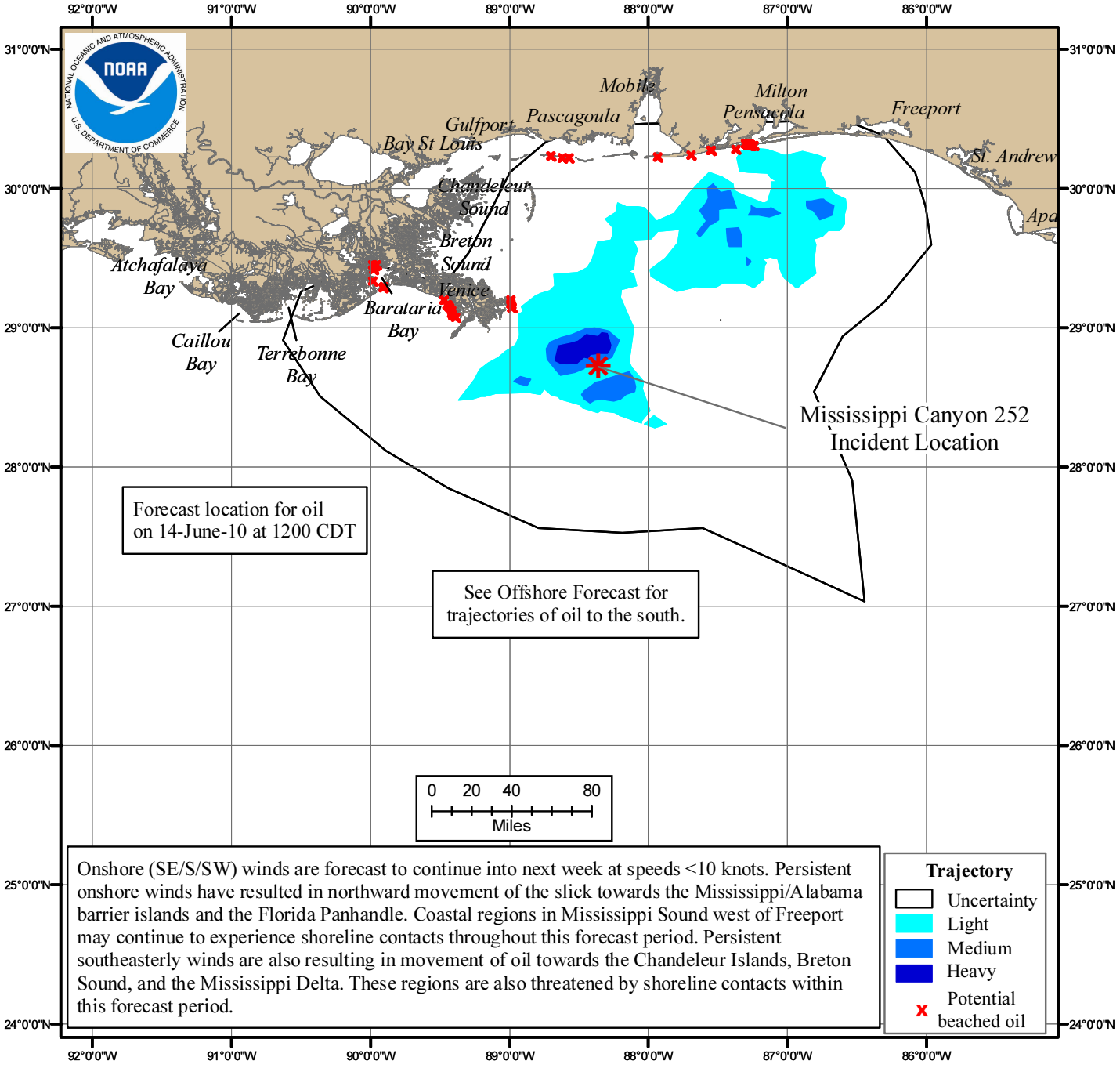
NOAA/NOS/OR&R

Nearshore

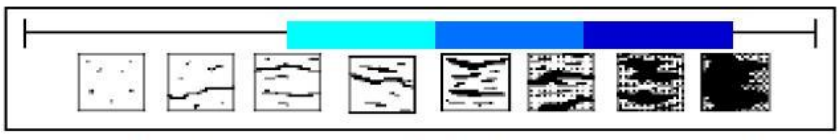
Estimate for: 1200 CDT, Monday, 6/14/10

Date Prepared: 2100 CDT, Friday, 6/11/10

This forecast is based on the NWS spot forecast from Friday, June 11 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Friday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.



Onshore (SE/S/SW) winds are forecast to continue into next week at speeds <10 knots. Persistent onshore winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands and the Florida Panhandle. Coastal regions in Mississippi Sound west of Freeport may continue to experience shoreline contacts throughout this forecast period. Persistent southeasterly winds are also resulting in movement of oil towards the Chandeleur Islands, Breton Sound, and the Mississippi Delta. These regions are also threatened by shoreline contacts within this forecast period.



this scale bar shows the meaning of the distribution terms at the current time

Next Forecast: June 12th PM



Shoreline Impact Outlook

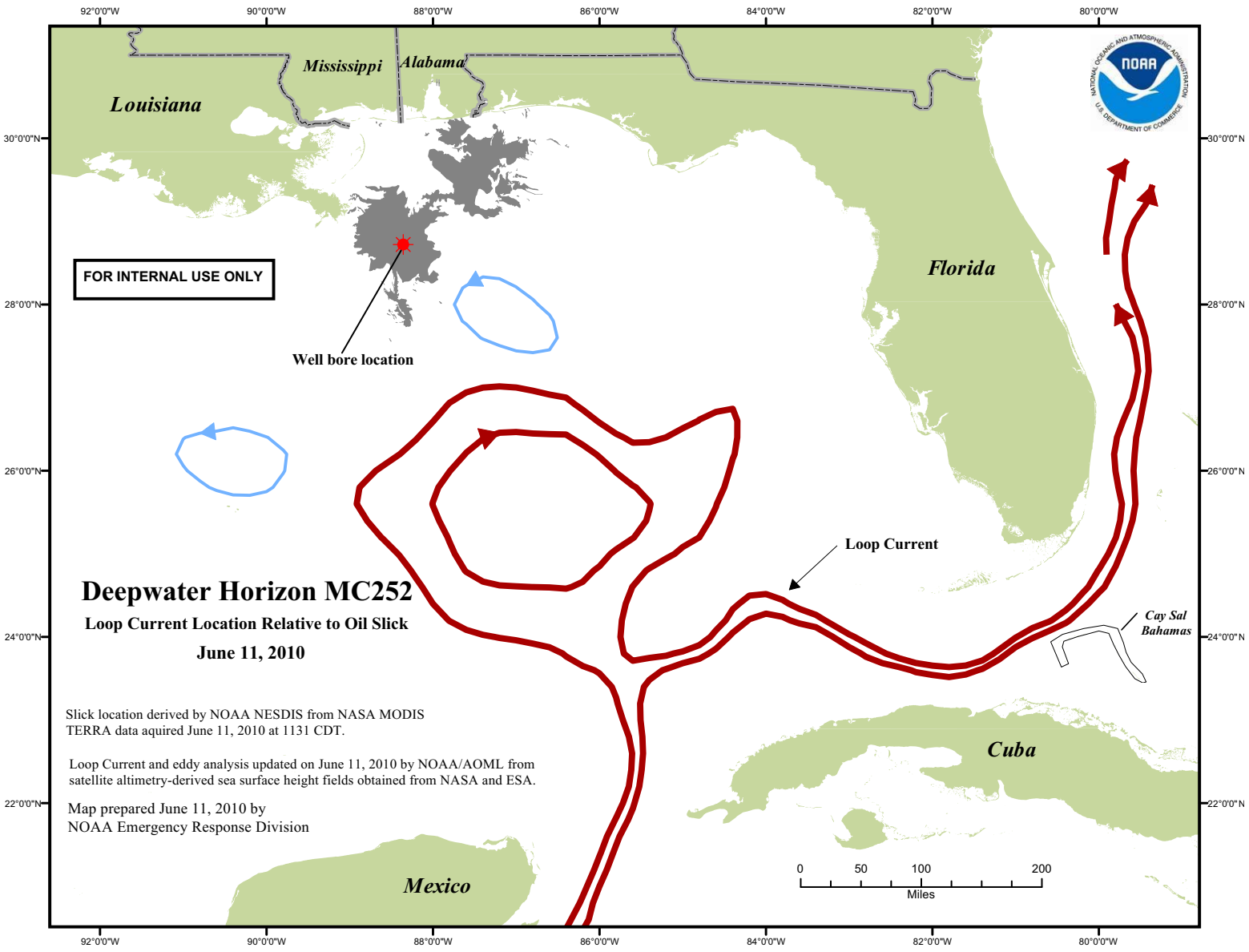
Prepared Wednesday, June 11, 2010

This map delineates threatened shorelines for the period of June 12-16 Because of the continuous leak at the source, there is potential to impact areas multiple times. Scattered tarballs which are not observable from overflight may impact shorelines ahead of the indicated dates. Forecasting beyond three days has greater uncertainty as to potential impacts.

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0 25 50 100
Miles

Document ID: 0.7.19.1794.3



Document ID: 0.7.19.1794.4

TIME: 9:00pm CDT, June 11, 2010
TO: NOAA SSCs
FROM: NOAA Office of Response and Restoration / Emergency Response Division
Seattle, WA 98115

SUBJECT: Deepwater Horizon MC252 incident and the Loop Current

Summary The Loop Current pattern is continuing to slightly increase the risk of the Loop Current serving as a mechanism to transport oil toward The Florida Straits. There continues to be no significant amounts of oil being moved toward the Loop Current. However, there has been a confirmation of a scattered tarball field at the northeast corner of the northern clockwise eddy (Eddy Franklin). This eddy may have begun to re-attach to the main Loop Current, and may or may not completely re-join it over the next few days to a week. This would provide a pathway for tarballs to move to the Florida Straits.

Observations There continues to be no evidence of high concentrations of oil in or near the Loop Current. The visible sheens near the northern edge of the Loop Current show signs of dissipating. Satellite analysis today did not pick up any sheens in the region of Eddy Franklin. A USCG and NOAA (Jeansonne) overflight indicated some linear features in the northeastern edge Eddy Franklin consistent with fields of scattered tarballs.

As discussed in previous reports, scattered tarball fields are often not visible from fixed wing aircraft or satellite observations. To confirm the presence of tarballs, the vessel R/V Walton Smith traveled to the northeast corner of the Loop current, where frequent sheens had been observed in the Satellite imagery. They found “little orange particles and some bits of more aggregated red oil” at location 26°46.07’N--86°03.77’W. The ship has taken some samples that have now been shipped to LSU. We expect analysis of those samples this Saturday.

That location is near the boundary of the counter clockwise eddy to the northeast of Eddy Franklin where there have been frequent sheens observed by satellite analysis and today’s overflight. We expect some of the oil in that location to remain in that eddy, but some may be drawn into Eddy Franklin. Once in Eddy Franklin, we expect most of it will remain there, circulating around the central Gulf, but some of it may follow a pathway from the outer edge of Eddy Franklin that leads to the Florida Straits.

There is some uncertainty as to whether Eddy Franklin has begun to re-attach to the main Loop Current. The connection to the main Loop Current on the southwestern side of the eddy has weakened. However, some of the models and the sea surface height analysis indicate a pathway from the far eastern edge of the Eddy Franklin to the Florida Current, indicating a possible re-connection. Two USF deployed drifter buoys have moved from the eastern edge of Eddy Franklin to the east, toward the Florida Straits, confirming this connection. We continue to monitor the situation closely.

The sheen that has been pulled toward the Loop Current continues to be stretched out and

Document ID: 0.7.19.1794.5

thinned. An NOAA overflight (Wesley) to the southeast of the spill site yesterday observed "isolated patches of sheen" extending toward Eddy Franklin. We do not expect larger concentrations of oil to move toward the Loop Current in the near future.

The observed tarballs are not likely to reach the Florida Straits in the next 3-4 days. The observations were in an area of convergence; any oil ultimately making it to the Florida Straits will likely be far more widely scattered. In order for tarballs to reach shorelines, there must be a persistent shoreward wind to bring them to shore. At this time, we estimate that the fraction that may reach shorelines may be slightly above background levels of tarballs already on the Florida shorelines.

How we are monitoring We continue to monitor the Loop Current characteristics from a number of satellite and model sources, a vessel contracted by BP to monitor at the northern front, and drifter buoys dropped in or near the Loop Current over the last few weeks.

The US Coast Guard will be conducting overflights daily to look for signs of significant oil over the Florida Shelf and Loop Current; a NOAA observer will be on board every 2-3 days. In addition, a sentry plan has been put in place by the Florida Peninsula Incident command. It consists of vessels transecting the Florida Current, west of the Dry Tortugas, in order to measure the tarball concentrations entering the Florida Straits. This activity should serve to provide a warning if significant tarball fields approach the Florida Straits.

What can be expected in the future It is likely that at some point in the future, another fraction of the oil will move south from the spill site. If Eddy Franklin remains separated from the Loop Current, most of the oil will circulate around the central gulf, weathering and dissipating long before nearing any shorelines. If Eddy Franklin has re-joined the main Loop Current, any oil moved to the northern extent of the eddy will once again have a pathway to the Florida Straits and beyond. We will continue daily monitoring of the Loop Current in order to monitor this re-connection.

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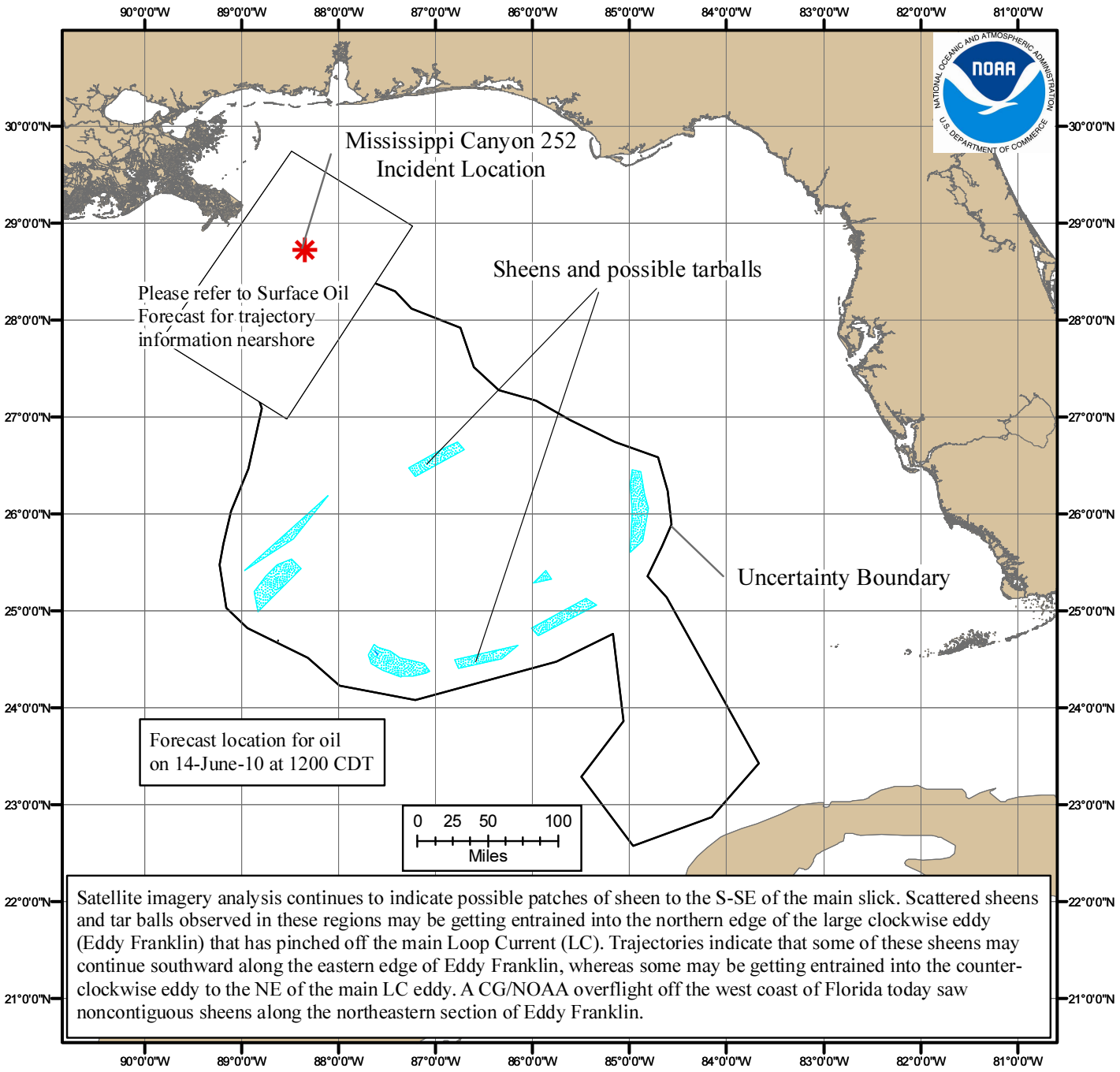
Offshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R

Offshore

Estimate for: 1200 CDT, Monday, 6/14/10
Date Prepared: 1900 CDT, Friday, 6/11/10

Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM , NRL, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 10/11 satellite imagery analysis, and a CG/NOAA overflight. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).



Satellite imagery analysis continues to indicate possible patches of sheen to the S-SE of the main slick. Scattered sheens and tar balls observed in these regions may be getting entrained into the northern edge of the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that some of these sheens may continue southward along the eastern edge of Eddy Franklin, whereas some may be getting entrained into the counter-clockwise eddy to the NE of the main LC eddy. A CG/NOAA overflight off the west coast of Florida today saw noncontiguous sheens along the northeastern section of Eddy Franklin.



this scale bar shows the meaning of the distribution terms at the current time

Next Forecast:
June 12th PM

ICC Deputy on Watch

Received(Date): Mon, 14 Jun 2010 08:24:44 -0400
From: "Mark.W.Miller" <Mark.W.Miller@noaa.gov>
Subject: Draft Marsh Options ppt
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
MarshCleanupMethods.pptx

NOAA's National Ocean Service / Office of Response & Restoration

OR&R

Oil Spill Response in Coastal Marshes



Document ID: 0.7.19.1713.1

Coastal marshes – critical supports for life

- *Marshes support the aquatic food web:*
  - *Exporting nutrients to coastal waters*
  - *Providing nesting habitat for migrating birds*
  - *Serving as nursery grounds for fish and shellfish*



- *Marshes are vulnerable to oil:*
  - *Toxins in oil can affect marsh plants and fauna*
  - *Thick oil can suffocate marsh plants*
  - *Oil can foul animals using the marsh habitat*

Document ID: 0.7.19.1713.1

Cleanup in coastal marshes

- *Objectives: minimize impact and enhance recovery*
- *Select cleanup methods that enhance recovery*
- *Avoid cleanup methods that could further damage an oiled marsh.*





Document ID: 0.7.19.1713.1

Is cleanup the right choice?

- *Use SCAT surveys to assess the damage*
  - *SCAT: Shoreline Cleanup and Assessment Technique*
- *Estimate the time to recover (in the absence of cleanup)*



Document ID: 0.7.19.1713.1

"Recovery"

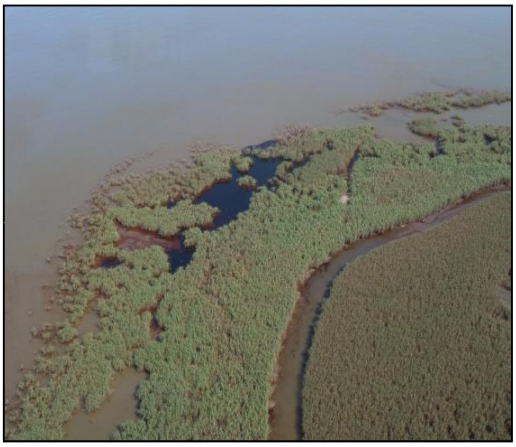
- *Not a return to the precise conditions preceding the spill, because natural systems constantly respond to environmental change*
- *A marsh that comes to resemble similar, unoiled marshes in important ecological parameters is considered to be recovered*



Document ID: 0.7.19.1713.1

Understanding Oiling: Heavily Oiled Marshes





OFFICE OF RESPONSE AND RESTORATION • NOAA's NATIONAL OCEAN SERVICE

Document ID: 0.7.19.1713.1

Understanding Oiling: Moderately Oiled Marshes





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Document ID: 0.7.19.1713.1

Understanding Oiling: Lightly or Very Lightly Oiled Marshes





OFFICE OF RESPONSE AND RESTORATION • NOAA's NATIONAL OCEAN SERVICE

Document ID: 0.7.19.1713.1

Response cleanup options

- *Natural recovery (no response)*
- *Vacuuming/ skimming oil*
- *Low-pressure flushing*
- *Manual oil removal*
- *Organic sorbents (synthetic & natural)*
- *In-situ burning (controlled burning)*
- *Vegetation cutting*
- *Surface washing agents*
- *Bioremediation*
- *Natural organic sorbents (cellulosic and consolidated)*



Document ID: 0.7.19.1713.1

Natural recovery (no response)



- *Allow the oil to degrade or be removed by tides and waves*
- *Minimal impact; avoids physical impact from workers; rapid recovery*
- *BUT potential for oiling of birds or wildlife; oil may impact adjacent areas; heavy oils may degrade slowly or form persistent residues*





Document ID: 0.7.19.1713.1

Vacuuming/skimming

- *Usually from boats, along with flushing*
- *Can remove large quantities of oil, speeding natural recovery*
- *BUT difficult to bring equipment into marsh; physical impacts may be considerable*







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Low pressure flushing (with near-source water)

- *Ambient water sprayed with hoses, used to flush oil out of marsh into boom on water's edge*
- *Can "herd" oil to collection points (can be used with vacuuming/ skimming); lifts oil off sediment surface (when marsh is not flooded)*
- *BUT pressure must be carefully controlled; must be carefully monitored; can make tidal areas susceptible to further oiling*



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Manual removal

- *Removal of stranded surface oil with hand tools and manual labor*
- *Avoids use of mechanized equipment; minimize soil disturbance (boardwalks)*
- *BUT can damage marsh & compact soil, slow, logistics challenging*



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Synthetic Organic Sorbents (contained)

- *Synthetic sorbents such as sausage boom, snare, and sweep are placed on outer marsh fringe*
- *Recovers oil as marsh releases it; no vegetation disturbance if properly deployed*
- *BUT improper use creates large amount of waste; requires constant maintenance*



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Natural Organic Sorbents (loose)

- *Natural sorbents such as bagasse, peat moss, and wood fiber in lightly oiled marshes*
- *Reduces risk of residual oiling to wildlife and vegetation; speeds degradation of residual oil*
- *Loose sorbent recovery unlikely so not appropriate for free-floating bulk oil; can slow oil degradation*





Document ID: 0.7.19.1713.1

Natural Organic Sorbents (consolidated)

- *Includes sorbents made from kenaf fiber, cotton lint, and other approved organic sorbents, in boom, socks, mats, etc.*
- *Easier to dispose of than other materials*
- *May absorb less oil than synthetic sorbents*





Document ID: 0.7.19.1713.1

In-situ burning (controlled burning)

- *Remove oil by burning it—only used post-source control*
- *Can remove oil quickly; can minimize impacts from other physical removal methods*
- *BUT high temperatures may damage plant roots and rhizomes, slowing recovery; creates localized air pollution; can be difficult to control*





Document ID: 0.7.19.1713.1

Vegetation cutting

- *Manual cutting and removal of oiled vegetation*
- *Increases recovery rate for pooled oil in otherwise inaccessible marshes*
- *BUT cut vegetation may die; foot traffic can press oil into soil; may increase rate of marsh loss*



Document ID: 0.7.19.1713.1

Surface washing agents

- *Liquid products, soften and lift oil from oiled surfaces*
- *Use only products non-toxic to plants*
- *May reduce oil contact hazard to wildlife, may increase plant survival*
- *BUT narrow window of opportunity; complex logistics, foot traffic can compact marsh*



Document ID: 0.7.19.1713.1

Bioremediation (nutrient enhancement)

- *Adding nutrients (e.g., N, P, K, or oxygen) to speed rates of natural microbial degradation of the oil*
- *Oil is highly biodegradable*
- *BUT unclear what factors limit natural degradation rates, oxygen is more limiting than nutrients in marshes (but no proven method to inject oxygen into marsh soils)*



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Natural Organic Sorbents – pre-treatment (Natural Cellulosic Materials)

- *Applied from boat with blower*
- *Proposed to pretreat unoiled marsh fringes in imminent danger of oiling*
- *Causes little physical disturbance, can increase rate of natural degradation*
- *BUT winds and tides may displace loose material from marshes; when oiled, may sink or be transported elsewhere. If removed after oiling, increases waste volume to treat.*



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Minimizing damage

- *Regardless of the method(s) chosen, minimizing damage is important*
  - *Approach from the water whenever possible*
  - *Use boards or platforms to distribute weight of people and equipment when work on the marsh surface is required*
  - *Work efficiently to minimize foot and vehicle traffic in marshes*
  - *Err on the side of using less-intrusive methods*

Document ID: 0.7.19.1713.1

Received(Date): Mon, 14 Jun 2010 16:16:13 -0400
From: John Oliver <John.Oliver@noaa.gov>
Subject: [Fwd: Re: URGENT: Call TODAY at 5pm EST]
To: "rapp >> John Rapp" <John.Rapp@noaa.gov>
2010_0614_Seafood by the numbers.docx
NOAA-FDA Surveillance Plan 6.14 CLEARED.docx
John_Oliver.vcf

-------- Original Message --------

Subject: Re: URGENT: Call TODAY at 5pm EST
Date: Mon, 14 Jun 2010 16:11:03 -0400
From: John Oliver <John.Oliver@noaa.gov>
To: Lauren B Lugo <Lauren.B.Lugo@noaa.gov>, Nancy Thompson <Nancy.Thompson@noaa.gov>, Lisa Desfosse <Lisa.Desfosse@noaa.gov>, Spencer Garrett <Spencer.Garrett@noaa.gov>, John E Stein <John.E.Stein@noaa.gov>, Usha Varanasi <Usha.Varanasi@noaa.gov>, Walton W Dickhoff <Walton.W.Dickhoff@noaa.gov>, Steven Wilson <Steven.Wilson@noaa.gov>, Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
CC: Steve Murawski <Steve.Murawski@noaa.gov>
References: <4C1687B3.2050305@noaa.gov>

Attached is a starting point for our discussion. Also where are we with sampling in the northwestern edge of the current closed area that is oil free? Have the samples reported by Bill Steers with oil in their bellies been tracked down?

John Oliver wrote:
> We need to have a call today. Below are questions that have been
> posed to us and we are required to answer by COB tomorrow. Call in
> will be at 5pm EST with the following dial in:
> B6 Privacy
> Pass code: B6 Privacy
> How many samples taken?
> How many boats taking samples and from where?
> How many samples can we process at Pascagoula and NWFSC?
> What types of seafood?
> How much dockside monitoring is going on now?
> How long does it take to get test results?
> How many state inspectors trained to do the sniff test, hotline
> numbers, etc.

NOAA's Seafood Surveillance Program by the Numbers

June 14, 2010

How many samples taken?

- As of June 10, 2010, seafood has been collected seafood at a total of 154 sampling stations. Of the 154 stations, 124 were for baseline sampling and 30 for re-opening. NOAA is focusing on collecting baseline samples off the Florida and Texas coasts. The area that was sampled for possible re-opening is no longer under consideration for re-opening.
- *Should have some numbers for chemical samples analyzed today from NWFSC. No sensory samples are being analyzed at this time because we are not considering areas for re-opening.*

How many boats taking samples and from where?

- As of June 14, 2010
  - Two small NOAA vessels (Caretta and Gandy) are sampling now. These are deployed from Pascagoula, Mississippi.
  - One contract vessel (Beau Rivage) is collecting seafood samples. Additional vessels may be contracted soon.
- Three large fisheries survey vessels are collecting seafood samples (Oregon II, Pisces, Gorden Gunter).
- One additional large survey vessel from NOAA's fleet is being deployed to the Gulf to collecte seafood samples in the coming weeks (and months). The Delaware II may arrive as early as next week.

How many samples can we process at Pascagoula and NWFSC?

- **???**

What types of seafood?

- NOAA is sampling and testing fish and shrimp in Federal waters for surveillance. Fish and shellfish will also be tested for re-opening. There is no commercial harvest of shellfish in Federal waters. The States will test fish, shrimp, crabs and shellfish for re-opening State waters.
- NOAA has identified 32 target species of fish for sampling and which are considered representative of the sampling location. Of those, 10 sentinel or indicator species have been selected for analysis that are of the highest fishery value or are representative of what is landed in a particular area.
- The exception is Highly Migratory Species which will be represented by what is caught by chance in the area. HMS species will be targeted specifically in surveillance sampling cruises.
- NOAA's baseline sampling has included fish, shrimp, crabs, and bivalves such as oysters and clams.

How much dockside monitoring is going on now?

- None at this time.
- The purpose of dockside samples by NOAA will be to verify whether fish arriving at docks caught from outside the closed area are not contaminated, particularly Highly Migratory Species (HMS). For samples taken at dockside, NOAA must be able to verify the location of the catch from either vessel monitoring systems that track the location of the vessel while fishing or by an observer on board. NOAA is planning to collect HMS species using the Delaware II and other vessels in its own fleet. Therefore, dockside sampling will be done as a complement to that activity.

How long does it take to get test results?

- Sensory testing (for reopening, primarily) takes approximately 2 days.
- Chemical analysis takes approximately 7-8 days.

How many state inspectors trained to do the sensory test?

- As of June 14, 40 State sensory assessors have been trained by the NOAA Seafood Inspection Program with contract to the University of Florida. On June 17, NOAA and its partner organization will have trained 60 State sensory assessors.
- As of June 14, NOAA and FDA have a total of 15 Federal expert sensory assessors harmonized and available to conduct sensory testing. NOAA will host another harmonization session for its expert assessors from June 21-25. After that date, we will have a total of 30 Federal expert assessors harmonized and available.

DEEPWATER HORIZON (DWH) OIL SPILL

June 14, 2010

Protecting the Public from Oil-Contaminated Seafood: Fishery Area Closure and Surveillance Plan

As part of the federal government's comprehensive efforts to ensure seafood safety, the National Oceanic and Atmospheric Administration (NOAA), in coordination with the U.S. Food and Drug Administration (FDA), has taken an aggressive and precautionary approach to prevent exposure of consumers to potential seafood contamination in the Gulf of Mexico. Closing oiled areas to fishing is the primary tool for preventing the entry of tainted fish and fishery products into the market place. Ongoing sampling of seafood will help ensure that closures are protecting the Nation's seafood supply.

The elements of the Federal strategy for seafood safety include:

Fishery Area Closure: Under its first emergency rule, promulgated on May 2, 2010, and subsequently revised on May 11, 2010, NOAA Fisheries has closed, and will continue to close, areas in the Gulf of Mexico in which there is visible oil on the surface. NOAA is also closing areas where NOAA has evidence of clearly detectable levels of subsurface oil from the BP Deepwater Horizon (DWH) oil spill, as well as areas that do not currently have surface oil but where the agency projects there will be surface oil based on NOAA's 48 to 72 hour surface oil trajectory forecasts and subsurface oil locations. In addition, NOAA has closed, and will continue to close, a 5 mile buffer area around the known or projected oil locations as a precaution. This buffer area accounts for uncertainties in the actual boundaries of the oil and movement of fish. To date, NOAA has not observed any subsurface oil outside the boundaries of the closed area. The Coast Guard and NOAA are monitoring the closed federal areas to ensure that fishermen are not fishing within those areas and will take enforcement action against fishermen violating the closure boundary.

Under their individual authorities, states have closed, and will continue to close, areas in the Gulf of Mexico in waters under their jurisdiction. The FDA is working with both NOAA and the states to monitor the situation and ensure that appropriate closures are in place. Fishermen and consumers should report any seafood contaminated by oil to 1-888-INFO FDA (1-888-463-6332) and include available details on the location of the seafood or catch, kind of seafood, and suspected contamination.

Surveillance Plan: NOAA will continue to sample fish in the vicinity of the closed area to account for the possibility that contaminated fish may move out of the closed area. NOAA has been taking baseline fish tissue samples in areas where there is currently no visible oil. NOAA also has historic baseline samples, which were taken after Hurricanes Katrina and Rita. NOAA will compare the surveillance samples with the baseline samples to evaluate whether contaminated fish are present outside the closed area. If fish samples have elevated levels of oil compounds, it is an indication that the boundaries and buffer zones of the closed area will need to be expanded to include areas where contaminated fish have been found. If NOAA finds evidence of tainted fish outside the closure area, NOAA will reevaluate the closure criteria and whether the evidence is sufficient to warrant changes to the criteria.

Dockside Sampling: NOAA is implementing a targeted dockside sampling program and will conduct tests of fish products arriving at docks as an additional level of screening to ensure that fish caught from outside the closed area are not contaminated. NOAA will verify that the catch was caught outside of a closed area either by vessel monitoring systems that track the location of a vessel or by an on-board observer. If tainted fish are found in dockside sampling, NOAA will notify the appropriate FDA and State seafood officials who have the authority to prevent oiled fish from entering commerce in fish markets or elsewhere, and evaluate whether there is sufficient evidence to warrant changes to the closure boundary.

Additional Baseline Sampling: In order for the surveillance sampling to be effective, NOAA needs an adequate comparison baseline as to the conditions of oil contaminants in the water and fishery prior to the Gulf spill. NOAA has an understanding of the pre-spill baseline conditions from a significant post-hurricane Katrina and Rita sampling effort as well as recently collected samples taken in Federal waters off Louisiana, Mississippi, and Alabama. The oil continues to spread and move. For this reason, more baseline sampling conducted by NOAA and EPA will enable the agencies to develop an even more robust understanding of the pre-exposure levels, particularly in areas off Florida and Texas. Therefore, NOAA and EPA will continue to gather baseline samples in oil-free Gulf waters in advance of any impact from the DWH spill.

States also need an adequate comparison baseline as to the presence of oil contaminants in the water and fishery prior to the Gulf spill. FDA has agreed to analyze baseline samples previously collected by the states. FDA has developed and distributed a baseline sample procedure to each state.

FDA Seafood Safety Program: The FDA operates a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, the Public Health Service Act, and related regulations. The FDA's seafood Hazard Analysis and Critical Control Point (HACCP) regulation requires processors to identify and control hazards which are reasonably likely to occur. FDA is issuing a letter reminding fish and fishery product processors of FDA's regulations and policy concerning the food safety hazard of environmental chemical contaminants, including the importance of verifying that fish they are processing have not come from closed waters. In addition, FDA is increasing inspections of Gulf Coast seafood processors to ensure compliance with this regulation.

FDA Market Surveillance: FDA is implementing a risk-based surveillance sampling program targeting seafood products at Gulf Coast seafood processors. The agency will be targeting oysters, crabs, and shrimp, which could retain contaminants longer than finfish. This sampling will provide verification that seafood on the market is safe to eat. FDA's sampling activities are designed to complement the dockside monitoring of finfish already planned by NOAA and described above.

Minimizing Economic Harm from the Oil Spill – The NOAA/FDA Reopening Protocol: NOAA and FDA recognize that the effects of the oil spill continue to grow as the oil continues to flow. However, as remediation efforts continue, it may be possible to alleviate some of the economic harm caused by the oil spill by reopening previously closed areas. NOAA will reopen these areas only if it is assured, based on testing of seafood from the area and consultation with FDA, that fish products within the closed area meet FDA standards for public health and wholesomeness. To that end, NOAA and FDA are continuing to refine a reopening protocol based on both chemical and sensory analysis of seafood within the closed area.

<CENTER><IMG SRC= http://www.nmfs.noaa.gov/images/usa2c.gif ></CENTER>

<CENTER><FONT SIZE="+1"><BOLD>John Oliver</BOLD></FONT></CENTER><CENTER>John.Oliver@noaa.gov</CENTER>

<CENTER>Deputy Assistant Administrator</CENTER><CENTER>National Marine Fisheries Service</CENTER><CENTER>(301)713-2239</CENTER>

Formatted Name

<CENTER><IMG SRC= http://www.nmfs.noaa.gov/images/usa2c.gif ></CENTER>

Name

Family: Oliver
First: John
Middle:
Prefix:
Suffix:

Organization

<CENTER>Deputy Assistant Administrator</CENTER><CENTER>National Marine Fisheries Service</CENTER><CENTER>(301)713-2239</CENTER>

Title

<CENTER><FONT SIZE="+1"><BOLD>John Oliver</BOLD></FONT></CENTER><CENTER>John.Oliver@noaa.gov</CENTER>

Version

2.1

Received(Date): Mon, 14 Jun 2010 17:15:41 -0400
From: Caren Madsen <Caren.Madsen@noaa.gov>
Subject: Daily DWH External Engagement report
To: dwh.staff@noaa.gov
Cc: 'Andrew Winer' <Andrew.Winer@noaa.gov>, Andrea.Bleistein@noaa.gov,'James Chang' <James.Chang@noaa.gov>,'Laurel Bryant' <Laurel.Bryant@noaa.gov>, 'Les Adams' <Les.Adams@noaa.gov>,"'Janet.E.Ward'" <Janet.E.Ward@noaa.gov>,'Justin kenney' <Justin.kenney@noaa.gov>, Scott.Smullen@noaa.gov,'Christopher Vaccaro' <Christopher.Vaccaro@noaa.gov>

DWH EXTERNAL ENGAGEMENT DAILY REPORT

From the External Affairs Team, NOAA Office of Communications and External Affairs

6-14-10

Over the weekend and today:

· **Interactions:**

Prepared agenda and conducted organizational call for regional outreach including representation from NOAA headquarters, the Southeast Regional Collaboration team, and Sea Grant.

External Affairs drafted a fact sheet for JIC approval on volunteer programs and is interacting with BP staff and representatives from four Gulf NGOs who have signed an MOU with BP to head up volunteer training and programs in their respective states.

Communicated with WH/interagency group over the weekend about the psychological impacts of the spill on the people of the Gulf coast after an American Psychological Association report addressed this. Members of the group provided feedback on any possible assistance that we can lend in terms of networking with mental health associations during the crisis.

Met with a Gulf outreach team assembled by EA to discuss reaching out to various sectors and forming workgroups around those sectors. We also discussed the ongoing series of meetings and outreach in the Gulf to date, re what's working well/what can we can improve and help.

· **Complaint e-mails:**

-

External Affairs received 9 emails over the weekend. We have responded to 5 of them. Topics included: general complaints (NOAA should never have used/approved dispersants, NOAA is misrepresenting amounts of oil in "plumes", etc), 2 suggestions on how to fix the leak, and questions about the oil spill's flow rate.

· **Mass Notifications:**

Emailed the press release on the new "one stop" website to follow the federal oil spill response to our NGO stakeholder list.

Caren Madsen

NOAA External Affairs

NOAA Office of Communications & External Affairs

B6 Privacy

Caren.Madsen@noaa.gov

External Affairs Website for stakeholders: www.ExternalAffairs.noaa.gov

NOAA Home Site: www.noaa.gov


NOAA


NOAA

Received(Date): Mon, 14 Jun 2010 17:32:26 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: DWH ACTIONS and UPDATES 6.14.2010
To: DWH leadership <DWH.Leadership@noaa.gov>
NRDA Activities Report_6_14_10.doc
OMAO_Assets_Gantt_Chart_061410.xlsx
NOAA Platforms 061410.pptx
Proposed OMAO Asset DWH Response Schedule 061410.doc
OMAO DWH Ship Tasking - Program Impacts 061410.docx
OMAO DWH Aircraft Tasking - Program Impacts 061410.docx
2010_0614_Seafood Safety Daily Report.docx
MMST Health and Stranding Update 06-13-10.doc
DWHMC252_Turtles20100614.pdf
DWHMC252_Dolphins20100614.pdf
ERMA_scat14JUN.pdf
OMAO_Assets_Gantt_Chart_061410.xlsx

PRIORITY

RESPONSE OPERATIONS - NIC/ICC/NRT

Response Operations
· Source Control: Top Hat is listing approximately 10 degrees. Technician degree of list, but are not planning any action since the system has been co approximately 15,000 barrels of oil per day. The long term recovery syste disconnect" for the processing and storage vessels is scheduled to be in pla weeks. Until then, if the Enterprise needs to leave station due to weather it decouple from the riser, and several more days to reconnect upon return.
· ERMA: Public ERMA – geoplatform.gov – is on the JIC landing page. J American people have questions about the response to this crisis. Today, N website meant to answer those questions with clarity and transparency– a c real-time information about the response to the Deepwater Horizon BP oil incorporates data from the various agencies that are working together to ta
· Shoreline: SCAT teams report 124 miles of shoreline in LA, MS, AL, FL attached).
NRT - See below (Fisheries Closures)
NIC Activities
· Birds: Discussion with USDA on using farms in the Midwest to reduce th the birds by altering migratory flyways. The Audubon Society plans to eva implementation. If funding via PRFA / NPFC not available, they plan to p level) using existing and private funds.
· Seafood Safety: Senior-level DHS/FDA/NOAA conference call regarding seafood safety - plans made for another call later this week with Gulf-state commissioners. The Institute of Medicine plans a workshop in New Orlea related health effects, possibly next week. Call from members of Congress intergovernmental task force on seafood safety to address the need for imp the DWH incident.

RESPONSE OPERATIONS - NIC/ICC/NRT (2)

· Fisheries Closures: At the request of USCG, NOAA staff briefed DHS D RADM Watson and the National Response Team on the fisheries closure p during today's NRT call. Topics included:
o Scheduling of daily precautionary fishery closure determinations and
o Timing of announcements;
o Strategy and criteria for reopening closed areas – both with and without c

o Coordination with FDA and states on seafood safety monitoring protocol

SCIENCE
LMR

attached
Fisheries Closure
* There were no modifications to the closed area in the Gulf EEZ for Ju
remains 78,264 sq mi (202,703 sq km), or about 32% of the GOM EEZ.
Seafood Inspection
* SIP personnel traveled to Pascagoula, MS today to deliver the final scl
training. The training is scheduled for Wednesday and Thursday, and will
State personnel. Once completed, SIP will have trained 60 State sensory s
* SIP is finalizing plans for the next expert sensory harmonization to be
June 21 – 25. Another 14 personnel from FDA and NOAA will be there to
assessors. Once completed this will bring our available Federal expert ass
* Steven Wilson and Michael McLaughlin of FDA finalized plans to val
nose using samples from the next scheduled harmonization. The electroni
that, if successful, will act as a sensory screening process as part of FDA's
successful, this will minimize the use of our valuable expert sensory assess
* The complete seafood inspection report is attached.
Marine Mammal and Sea Turtle Health and Stranding
* 411 total sea turtles verified to date within the "designated spill area" (
report o 363 stranded(increase of 13 from June 12)
+ 330 of the stranded were found dead (increase of 9 from June 1
+ 33 of the stranded were found alive (increase of 4 from June 12
+ 25 live turtles in rehabilitation (increase of 4 from June 12)
* 48 turtles collected during directed turtle sampling efforts (increase
o 42 live turtles in rehabilitation (increase of 11 from June 12)
* 211 carcasses to be necropsied, if decomposition stage warrants (inc
* To date, visible evidence of oil has been documented externally on 4 d
live stranded turtles (2 of which were caught in skimming operations).
* To date, visible evidence of oil has been documented externally on 45
turtle captured during directed turtle surveys.

* 41 dolphins have been verified to date within the "designated spill area

* Issues regarding nighttime operations on sea turtle nesting beaches in
again today. Communication problems and lack of adherence to protocols
practices resulted in interference with the nest survey and nest marking eff
completely obliterating a fresh emergence and resulting in significant diffi
to accurately evaluate the crawl, find, and mark the nest.
* The complete health and stranding report, turtle stranding map, and do
attached.

LMR (2)

Marine Mammal and Sea Turtle Health and Stranding
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report o 363 stranded(increase of 13 from June 12)

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turtle captured during directed turtle surveys.

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to accurately evaluate the crawl, find, and mark the nest.
* The complete health and stranding report, turtle stranding map, and do
attached.

NRDA

1. Technical Working Group Updates
Shoreline: Four teams went out in the field to complete pre-assessment sho
Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Po
Forensic oil sampling occurred in West-South Terrebonne Bay and West-N
Team 1 Surveyed areas of scattered tarballs and some tar patties along bea
cover. Responded to input from Army Corps staff that oil had entered the
west; consistent oiling along both sides of western bayou. Observed areas
tar patties along beach (<1% to 5% cover, depending on location); 100s of
nesting with scrapes and nests with eggs.
Team 2 Evaluated previously mapped shoreline along the northern shoreli
mapped the northern shore of Bay Batiste and noted heavy oiling along thi
Team 3 assessed marsh areas north of Whiskey Island. Waypoint and trac
data sheets were collected from 19 waypoints during the day's field effort.
starting at the easternmost limits of SCAT oil mapping data in the area, pr
direction. Data obtained during the day's field effort was found to coincid
mapping data.
Team 4 – no summary report
Sample Intake Teams – Samples processed at shoreline as of 6/13/10:
· Chain of Custody's processed: 242
· Number of Water Bottles Received: 2589

NRDA (2)

Chemistry: As of June 14th, approximately 4500 samples have been colle
baseline and pre-assessment data collection. This total consists of approxi
20% sediment samples, and 5% or less of tissue, oil (tarballs), oil on water

	Water Column: NRDA sampling activities are ongoing aboard 2 vessels. 3 NRDA sampling activities are ongoing aboard two vessels: · Brooks McCall: Conducting deep water sampling 2.5 km northwest of w · Jack Fitz: Testing equipment for deepwater sampling 2km west of the we · Ocean Veritas - In Port Fourchon (scheduled to depart 6/13). Will have N water sampling. · Gordon Gunter in Port (Pascagoula, MS). Expected to get underway 6/2 · Bunny Bordelon in Port (Port Fourchon, LA) · A draft plan is in the works that proposes up to five boats for doing Gulf- Human Use: Boat ramp and shore fishing counts in LA, MS, AL, and, FL. North Gulf coast between LA/MS border and Appalachicola SAV: Processing data from weekend surveys and identifying long-term s injury assessment phase. Marine Mammals: The focus of the 6/13 flight was to provide the strandin sargassum locations for potential turtle rescues. No sea turtles were obser were observed. Next NRDA flight scheduled for Monday, 06-14-10.
ASSETS AND PLATFORMS	attached
REGIONAL	Regional staff involved with education, outreach and engagement (EOE) h with Andy Winer to coordinate constituent outreach.
LEGISLATIVE / INTERGOV'T AFFAIRS	no update
COMMS / PUBLIC AFFAIRS	Held GeoPlatform.gov webinar for media. Planning second session for JI *Final cleared seafood safety news release. To be issued tonight.
EXTERNAL ENGAGEMENT	Interactions: Prepared agenda and conducted organizational call for regional outreach in NOAA headquarters, the Southeast Regional Collaboration team, and Sea External Affairs drafted a fact sheet for JIC approval on volunteer program staff and representatives from four Gulf NGOs who have signed an M volunteer training and programs in their respective states. Communicated with WH/interagency group over the weekend about the ps spill on the people of the Gulf coast after an American Psychological Asso Members of the group provided feedback on any possible assistance that w networking with mental health associations during the crisis. Met with a Gulf outreach team assembled by EA to discuss reaching out to workgroups around those sectors. We also discussed the ongoing series of Gulf to date, re what's working well/what can we can improve and help. · Complaint e-mails External Affairs received 9 emails over the weekend. We have responded included: general complaints (NOAA should never have used/approved di misrepresenting amounts of oil in "plumes", etc), 2 suggestions on how to about the oil spill's flow rate. · Mass Notifications: Emailed the press release on the new "one stop" website to follow the f NGO stakeholder list.
DATA INFORMATION	Data and Information Management Daily Update— June 14, 2010 -Public use of www.geoplatform.gov/gulfresponse continues to increase. -Improvements to public ERMA application performance continued throug

	-Working with DWH Science Team on DWH data flows and storage. -No update from EPA today on air/water quality availability for public ER
IA/ INTERNATIONAL AFFAIRS	1. Provided geoplatform.gov press release to State so that Posts as well as i aware and informed of the oil situation. Also shared with Bermuda scienti Environment and Sport) whom Dr. Robinson met at Science Summit. 2. NIC cleared on response to questions from Bahamas and forwarded to J Spring, Kris Sarri, Mark Miller, and State to understand and comply with c 3. Seeking to arrange meeting for Dr. Porfirio Alvarez (Mexico) with Dr. I Washington June 15-17. Contacted Dr. Robinson regarding his availabilit 4. The Cuba Desk at State asked questions about the loop current and poss fishing outside U.S. EEZ (currently the closure area includes regions up to Working on responses. 5. The seafood safety cable drafted by NMFS and cleared by FDA and US The cable is generic in nature and is meant to reassure host countries that t seriously and is actively working to maintain the safety of U.S. seafood ex assigned to Brussels will convey message to EC. Key Bullets · State informed about geoplatform.gov; can pass to Posts and internationa · Response to questions from Bahamas cleared by NIC and sent to JIC. · Staffing visit request by Dr. Porfirio Alvarez (Mexico) for meeting with I from the Cuba Desk about loop current and possible fisheries concerns. · Seafood safety cable dispatched.
LEGAL / GC	no update
POLICY / BUDGET	no update

NOAA NRDA Activities Report - June 14, 2010

(Reporting Activities from June 13, 2010)

1. Technical Working Group Updates

Shoreline: Four teams went out in the field to complete pre-assessment shoreline surveys at Pelican Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Point Chenier/Bay Island. Forensic oil sampling occurred in West-South Terrebonne Bay and West-Northwest Terrebonne.

Team 1 Surveyed areas of scattered tarballs and some tar patties along beach at Pelican Island. (<1% cover. Responded to input from Army Corps staff that oil had entered the bayou yesterday and headed west; consistent oiling along both sides of western bayou. Observed areas of scattered tarballs and some tar patties along beach (<1% to 5% cover, depending on location); 100s of skimmers and terns, some nesting with scrapes and nests with eggs.

Team 2 Evaluated previously mapped shoreline along the northern shoreline of Bay Batiste on 6/13/10, mapped the northern shore of Bay Batiste and noted heavy oiling along this entire shoreline.

Team 3 assessed marsh areas north of Whiskey Island. Waypoint and tracklog data, photographs and data sheets were collected from 19 waypoints during the day's field effort. All waypoints were collected starting at the easternmost limits of SCAT oil mapping data in the area, progressing in a westward direction. Data obtained during the day's field effort was found to coincide with existing SCAT mapping data.

Team 4 – no summary report

Sample Intake Teams – Samples processed at shoreline as of 6/13/10:

- Chain of Custody's processed: 242
- Number of Water Bottles Received: 2589

Chemistry: As of June 14th, approximately 4500 samples have been collected to support NRDA baseline and pre-assessment data collection. This total consists of approximately 70% water samples, 20% sediment samples, and 5% or less of tissue, oil (*tarballs*), oil on water product, and dispersant.

Water Column: NRDA sampling activities are ongoing aboard 2 vessels. 3 vessels are in port.

NRDA sampling activities are ongoing aboard two vessels:

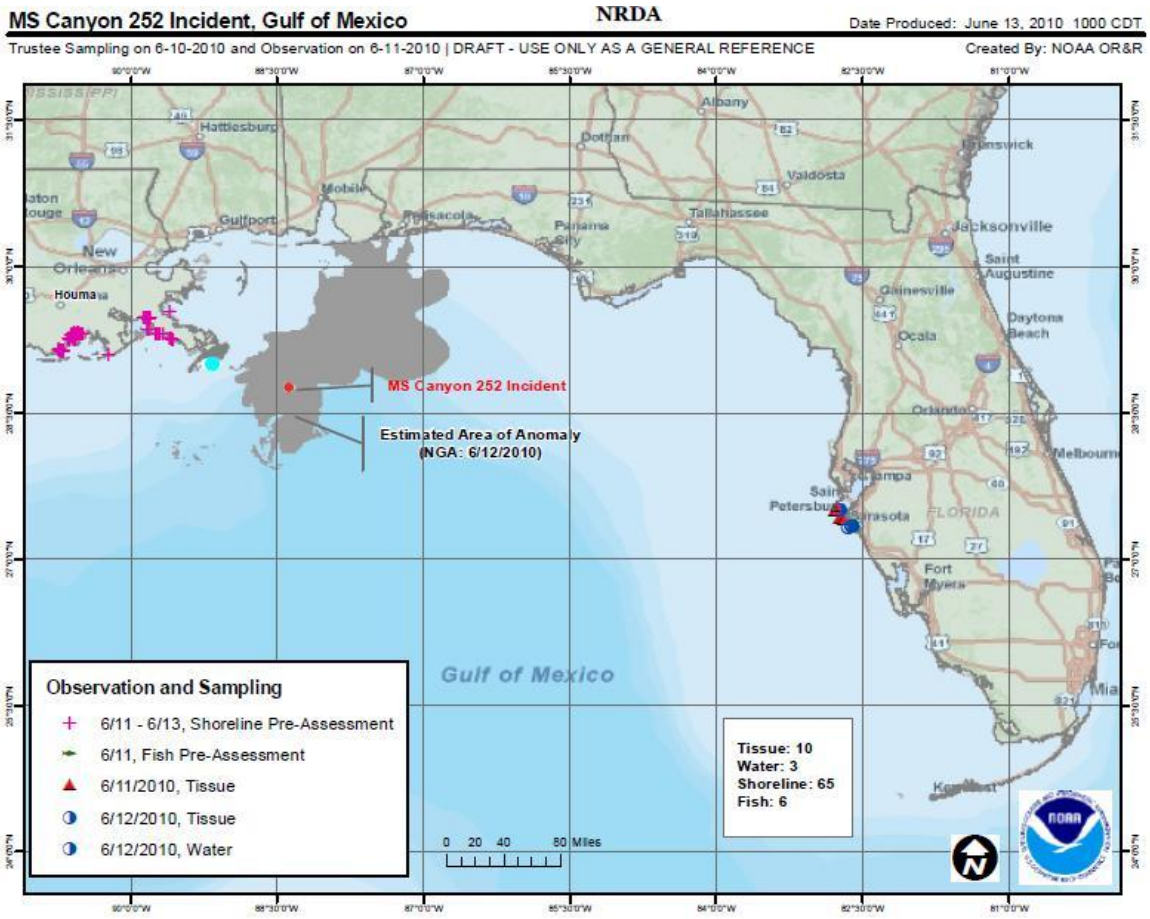
- **Brooks McCall:** Conducting deep water sampling 2.5 km northwest of wellhead, moving southwest.
- **Jack Fitz:** Testing equipment for deepwater sampling 2km west of the wellhead.
- **Ocean Veritas -** In Port Fourchon (scheduled to depart 6/13). Will have NRDA staff conducting deep water sampling.

- **Gordon Gunter** in Port (Pascagoula, MS). Expected to get underway 6/21.
- **Bunny Bordelon** in Port (Port Fourchon, LA)
- A draft plan is in the works that proposes up to five boats for doing Gulf-wide monitoring.

Human Use: Boat ramp and shore fishing counts in LA, MS, AL, and, FL. Overflights continuing along North Gulf coast between LA/MS border and Appalachicola

SAV: Processing data from weekend surveys and identifying long-term sampling dates and sites for injury assessment phase.

Marine Mammals: The focus of the 6/13 flight was to provide the stranding ground team with sargassum locations for potential turtle rescues. No sea turtles were observed. No marine mammals were observed. Next NRDA flight scheduled for Monday, 06-14-10.



Document ID: 0.7.19.2014.1

Received(Date): Tue, 15 Jun 2010 14:02:52 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update June 14

Gulf of Mexico Oil Spill Response Update

06/14/2010 – 8:00pm EDT

BP is working as part of the Unified Command to accomplish three main objectives in the Gulf of Mexico:

1. Offshore - to stop the flow of oil on the sea floor;

2. Offshore – to minimize impacts of the spill on the surface; and

3. Onshore to protect and cleanup the shoreline, inform the public, and compensate impacted people.

Highlights

- 15,208 barrels of oil captured by the Lower Marine Riser Package Cap on June 13. 156,730 barrels collected to date.
- Environmental Monitoring sampling data on BP website
- Unified Command launches Interactive Gulf Response mapping tool.
- 421 skimmers are now active.
- Over $63 million paid in claims – see State Summaries.

Offshore – Sea Floor

BP's priority is to contain the oil spill and complete relief wells to kill the flow.

ContainmentRecovery

- Lower Marine Riser Package (LMRP) Cap **-** 15,208 barrels of oil were captured through the LMRP cap during the past 24-hour period. Total recovery from the LMRP Cap is 156,730 barrels to date. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.*

ξ Additional Containment Capacity – efforts are underway to add containment capacity through new systems to complement the LMRP Cap.

o BP plans to utilize the *Q4000* drilling platform by reversing the flow on the choke line, which is connected to the blowout preventer and was previously used to carry mud during the "top kill" effort. This system is expected to be deployed in mid-June.

o Permanent Riser Systems – BP will also bring in two additional ships which will be connected to two "permanent riser systems." These systems will be capable of quick disconnect/reconnect in the event of a hurricane.

-

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, with approximately 9,500 gallons applied on June 13. EPA is allowing subsea application of the currently-used dispersant to continue.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

ξ The first relief well (work being performed by the *Development Driller III*) is at 13,978 feet below sea level. This well was "spudded" on May 2.

ξ The second relief well (work being performed by *Development Driller II*) is at approximately 9,120 feet below sea level. Drilling began on May 16.

Offshore – Surface Response

Skimming Vessels – 421 skimmers designed to separate oil from water are deployed across the Gulf. Approximately 486,500 barrels of oil-water mix have been recovered and treated, including 12,383 barrels in the prior 24 hours.

Surface Dispersant – 36,000 gallons of dispersant was applied on the surface yesterday.

In-Situ Burning – 14 burns were conducted in the last 24-hour period. 102,800 barrels are estimated to have been consumed through burns.

BP Environmental Monitoring Programs – As part of the response effort, several ongoing sampling and monitoring programs have been implemented based on the type of impact or location and trajectory of the spill. Monitoring and sampling programs are being conducted for:

- air quality
- water quality
- water column sampling
- submerged oil, and
- worker health

Sampling data can be found at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

New Interactive Mapping Website – Today, NOAA launched a new federal website meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill. The website incorporates data from the various agencies that are working together to tackle the spill. The website www.GeoPlatform.gov/gulfresponse integrates the latest data on the oil spill's trajectory, fishery closed areas, wildlife and place-based Gulf Coast resources — such as pinpointed locations of oiled shoreline and daily position of research ships — into one customizable interactive map.

Spill Response Technology and Offers of Services or Products –

- BP has received more than 80,000 ideas on how to stop the flow of oil or contain the oil spill since the Gulf of Mexico incident began. To submit alternative response technology, services or products, call (281) 366-5511. Each caller to the Houston suggestion line will have their details entered into the Horizon Call Center database. The database will then send the caller a simple form, termed either the Alternative Response Technologies form, or the Products and Services Form, for them to set out the details of their idea. The forms are available online at: www.horizonedocs.com. After the caller completes and submits the form, it is sent for review by a team of 30 technical and operational personnel who will review its technical feasibility and application. Given the quantity of the proposals and the detail in which the team investigates each idea, the technical review can take some time.

- The U.S. Government has also issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That announcement can be found online at: https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore – Shoreline Protection and Funding

Boom Update – 2.5 million feet of containment boom deployed across the Gulf with over 600,000 feet in staging areas. 3.2 million feet of sorbent boom is deployed with 1.8 million feet in staging areas.

Alabama

- Boom – 523,000 feet of containment boom deployed and 135,000 feet staged.
- Activated Vessels – 245 official response vessels, 854 Vessels of Opportunity, 33 skimmers, 68 barges.
- Shoreline Impacts – More than 1,000 people working to clean up Dauphin Island, and more than 1,000 people working to clean up locations from Ft. Morgan to Perdido Pass.

Florida

- Boom – 299,900 feet of containment boom deployed and 58,750 feet staged.
- Activated Vessels – 147 official response vessels, 365 Vessels of Opportunity, 109 skimmers, 17 barges.
- Shoreline Impacts – More than 620 people working to clean up oiling between Pensacola Beach and Navarre Beach. No other current shoreline impacts noted.

Louisiana

- Boom – 1,346,264 feet of containment boom deployed or assigned. 282,654 feet of boom staged.
- Activated Vessels – 1,655 official response vessels, 275 Vessels of Opportunity, 150 skimmers, 369 barges.
- Shoreline Impacts – 1,810 people are working to clean up oil at locations in St. Bernard, Plaquemines, Jefferson, Lafourche and Terrebonne parishes. Oiling at other locations has been cleaned and the areas are being monitored for re-oiling.

Mississippi

- Boom – 367,000 feet of containment boom deployed.

- Activated Vessels – 322 official response vessels, 567 Vessels of Opportunity, 107 skimmers, 55 barges.

- Shoreline Impacts – Petit Bois Island, 322 people working on cleanup.

Volunteers and Training – 24,185 volunteers are signed up, trained, and working as of June 13. Volunteers are being trained in five different modules that range from safety for beach clean-up, to wildlife monitoring, handling of hazardous materials and vessel operation for laying boom. Information about training can be found at www.deepwaterhorizonresponse.com under "volunteers."

State Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

Onshore – Claims and Outreach

Claims

- 31 Claims offices have been established by BP across the Gulf Coast to provide locations where people can go to file or discuss claims. There are more than 145 operators answering phones, and 600 claims adjusters staffing the offices. Vietnamese and Spanish translators are in some offices.

- *Note: No person asserting a claim or receiving payment for interim benefits will be asked or required to sign a release or waive any rights to assert additional claims, to file an individual legal action, or to participate in other legal actions associated with the Deepwater Horizon incident.*

- The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: www.bp.com/claims

Claims Summary as of June 14

Alabama Counties	Claims Paid
Mobile	$8,134,739
Baldwin	$2,437,303
Monroe	$66,000
Jefferson	$42,098

Clarke	$37,000
Montgomery	$31,100
Covington	$30,000
Escambia	$24,000
Wilcox	$23,500
Tuscaloosa	$20,900
Dale	$16,500
Chilton	$12,500
Madison	$12,009
Washington	$10,226
Other Counties	$360,279
Alabama Total	$11,258,153

Florida Counties	Claims Paid
Franklin	$2,201,557
Escambia	$1,590,693
Okaloosa	$1,414,762
Bay	$1,314,600
Santa Rosa	$521,127
Wakulla	$415,715
Gulf	$312,500
Walton	$178,930
Pasco	$66,000
Liberty	$42,300
Pinellas	$37,500
Leon	$30,000
Duval	$27,500
Washington	$25,000
Jackson	$25,000
Calhoun	$21,075
Citrus	$15,000
Hillsborough	$12,500
Lake	$12,500
Other Counties	$225,470
Florida Total	$8,489,727

Louisiana Parishes	Claims Paid
Plaquemines	$6,872,985
Jefferson	$6,643,009
Terrebonne	$5,803,805
Lafourche	$3,684,600
Saint Bernard	$3,127,636
Orleans	$1,607,423
Saint Tammany	$1,363,630
Vermilion	$1,022,383

Iberia	$597,624
Saint Charles	$589,100
Calcasieu	$551,300
Saint Mary	$456,800
Cameron	$446,650
Lafayette	$273,694
Tangipahoa	$232,500
Livingston	$145,000
East Baton Rouge	$136,054
St John the Baptist	$91,750
Washington	$66,700
Saint Martin	$65,500
Assumption	$61,500
Jefferson Davis	$52,500
Ascension	$43,900
Saint Landry	$43,434
Beauregard	$41,000
Saint James	$39,000
Pointe Coupee	$24,900
Avoyelles	$23,900
Other Parishes	$948,099
Louisiana Total	$35,123,875

Mississippi Counties	Claims Paid
Harrison	$3,246,455
Jackson	$1,639,503
Hancock	$1,097,698
Stone	$105,125
Pearl River	$104,800
Lamar	$61,000
George	$60,500
Pike	$19,300
Lawrence	$15,000
Forrest	$15,000
Lincoln	$12,500
Chesterfield	$12,500
Marion	$12,500
Madison	$11,800
Neshoba	$10,000
Other Counties	$204,550
Mississippi Total	$6,628,232

Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

Received(Date): Tue, 15 Jun 2010 16:54:56 -0400
From: Beth Lumsden <Beth.Lumsden@noaa.gov>
Subject: NOAA Science Briefing June 16
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: _DWH Science Box <DWH.Science.Box@noaa.gov>,John Oliver <John.Oliver@noaa.gov>
Science box staffing contacts.xlsx

DWH Staff
Please see attached

June 16th Science Briefing.
Dispersant 101 as cleared through the science box
Updated Staffing (Oceanography and Ecosystem Impacts leads were left off)

Thank you
Beth

Dispersants 101



Application of Dispersant. Photo credit: NOAA.

For NOAA staff working on the Deepwater Horizon Spill, prepared for the Science Box

(note—USEPA has regulatory authority for approving the use of dispersants, and additional technical information on dispersants, including information on their use in the DWH spill, can be found here: http://www.epa.gov/bpspill/dispersants.html#list)

What are dispersants? Dispersants are mixtures of chemicals that include active ingredients together with solvents and other additives that facilitate their use and effectiveness. The most abundant dispersants used so far in the Gulf of Mexico are Corexit 9500 and Corexit 9527. The main differences between these are in the component solvents and other additives; Corexit 9527 is a more water-miscible preparation, whereas Corexit 9500 uses petroleum distillates as solvents. The active chemicals in dispersants are actually detergents that are "amphiphilic", that is, they have both water-attractive (hydrophilic) and oil- or lipid-attractive (lipophilic) properties. The amphiphilic properties of these detergents makes them useful for breaking down oil sheens on the water surface, or large aggregates of oil under the water, into much smaller microdroplets. Common dish detergents work by the same principle.

Why are dispersants used? The primary objective in oil spill response is to physically remove the oil, but this option may not be possible given the scale or operational conditions for some spills. Dispersants are used to reduce the risk of oiling to surface dwelling animals (birds, marine mammals) and coastal habitats (shoreline, wetlands). Dispersion transfers this risk from the surface to the subsurface, usually to the top ~ 10 meters of the water column. Many important species occupy this zone (plankton, fish), so the decision to use dispersants is usually a question of tradeoffs to minimize the overall ecological impacts of a spill.

What is the toxicity of the active ingredients in dispersants? The detergent components of dispersants are generally no more toxic than household detergents. Moreover, one of the detergents in Corexit products (Tween 80; sorbitan mono-(9Z)-9-octadecenoate) has been approved by the U.S. Food and Drug Administration as a food

Document ID: 0.7.19.1945

NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

June 16, 2010

Dispersants 101



Application of Dispersant. Photo credit: NOAA.

For NOAA staff working on the Deepwater Horizon Spill, prepared for the Science Box

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Document ID: 0.7.19.1945.1

and pharmaceutical additive. Detergents will likely irritate the eyes and mucous membranes lining the airways of turtles, dolphins, birds, humans, and other large animals. However, they would have to be ingested in very large amounts to be systemically toxic. Smaller animals with shells (crabs, shrimp) or scales (fish) should be relatively well protected from the external effects of detergents. Marine life without a hard shell or scales (e.g., soft corals, jellyfish, marine bacteria, etc.) could be more susceptible to damage by detergents in dispersants due to their lipophilic properties. Lipophilic chemicals such as detergents and petroleum hydrocarbons in crude oil can break down or "dissolve" unprotected cell membranes. In the same way, the detergents may be toxic to specialized cells in larger animals that are directly exposed to the surrounding marine environment.

What is the toxicity of other components of dispersants? The solvents and other additives in dispersants have potentially toxic properties that are independent of the detergent components and also less well characterized. The identity of these compounds is in many cases proprietary (i.e., confidential business information) and therefore unknown to the general scientific community. One of the proprietary organic solvents used in Corexit products can be neurotoxic to humans if inhaled. However, for birds and marine life, the toxicity of the solvents and additives in dispersants is largely untested and therefore poorly understood.

What do we know about the effects of dispersant/oil mixtures? The application of dispersants to crude oil can increase the hydrocarbon exposure risk for fish, shrimp, oysters, corals, and other species. Dispersants break oil masses down into smaller droplets. This causes more hydrocarbons from surface slicks and subsurface plumes to enter the water column where they can be more readily taken up by marine organisms. This increased uptake of dispersed hydrocarbons has been shown for several different marine species. However, the different processes governing the uptake and effects of dispersed oil have not been studied in detail. For example, it is not known how very small, sub-microscopic detergent-oil complexes interact with gills, sensory neurons, and other types of surface membranes. It is important to note that while exposure risk to water column species may be greatly increased over the short term, over the longer term factors that can reduce overall exposure risk can also come into play, such as dilution and increased microbial activity in association with smaller oil particles.

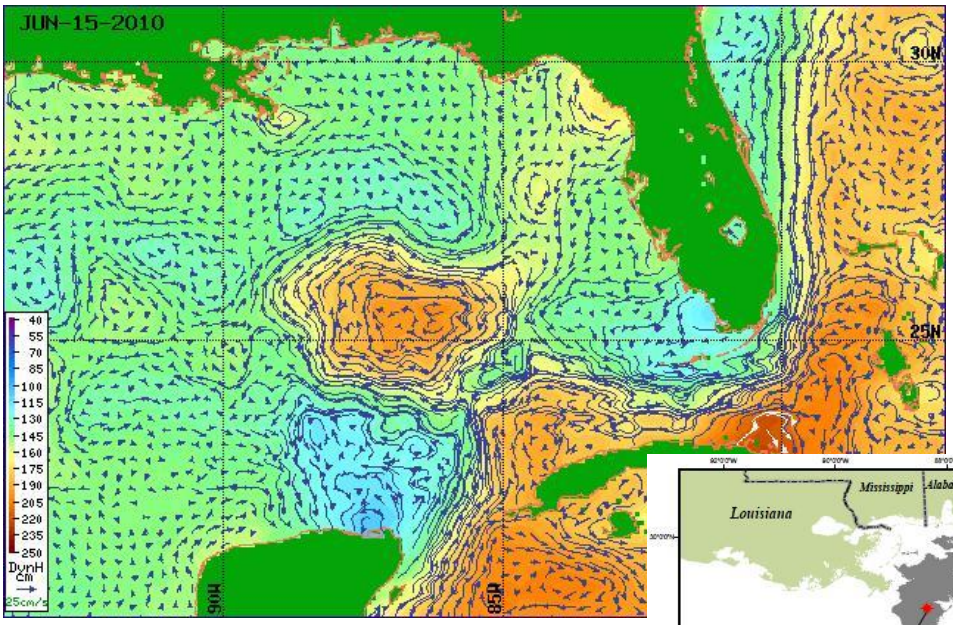
NOAA Science Situational Awareness Briefing

Deepwater Horizon MC252

June 16, 2010

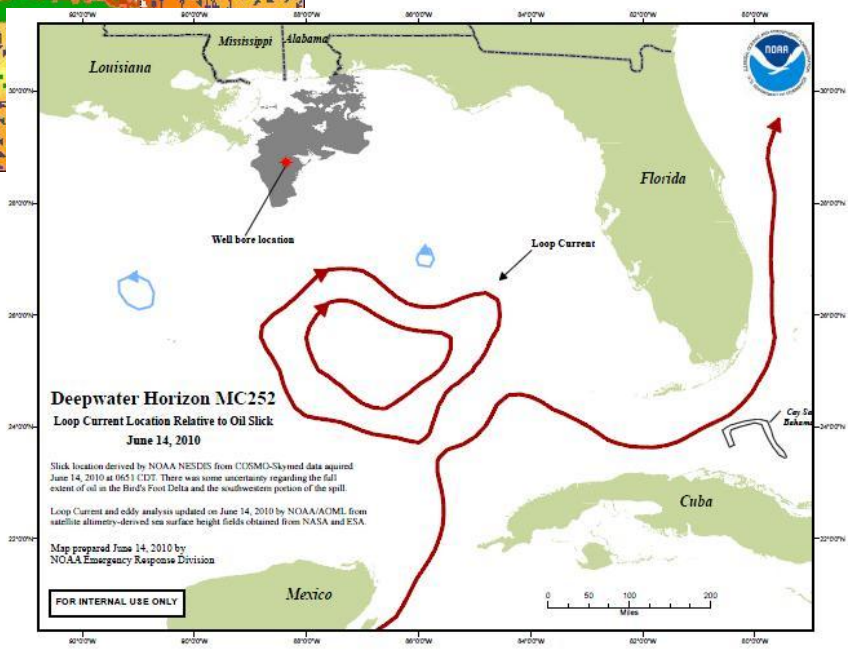
Topics include:

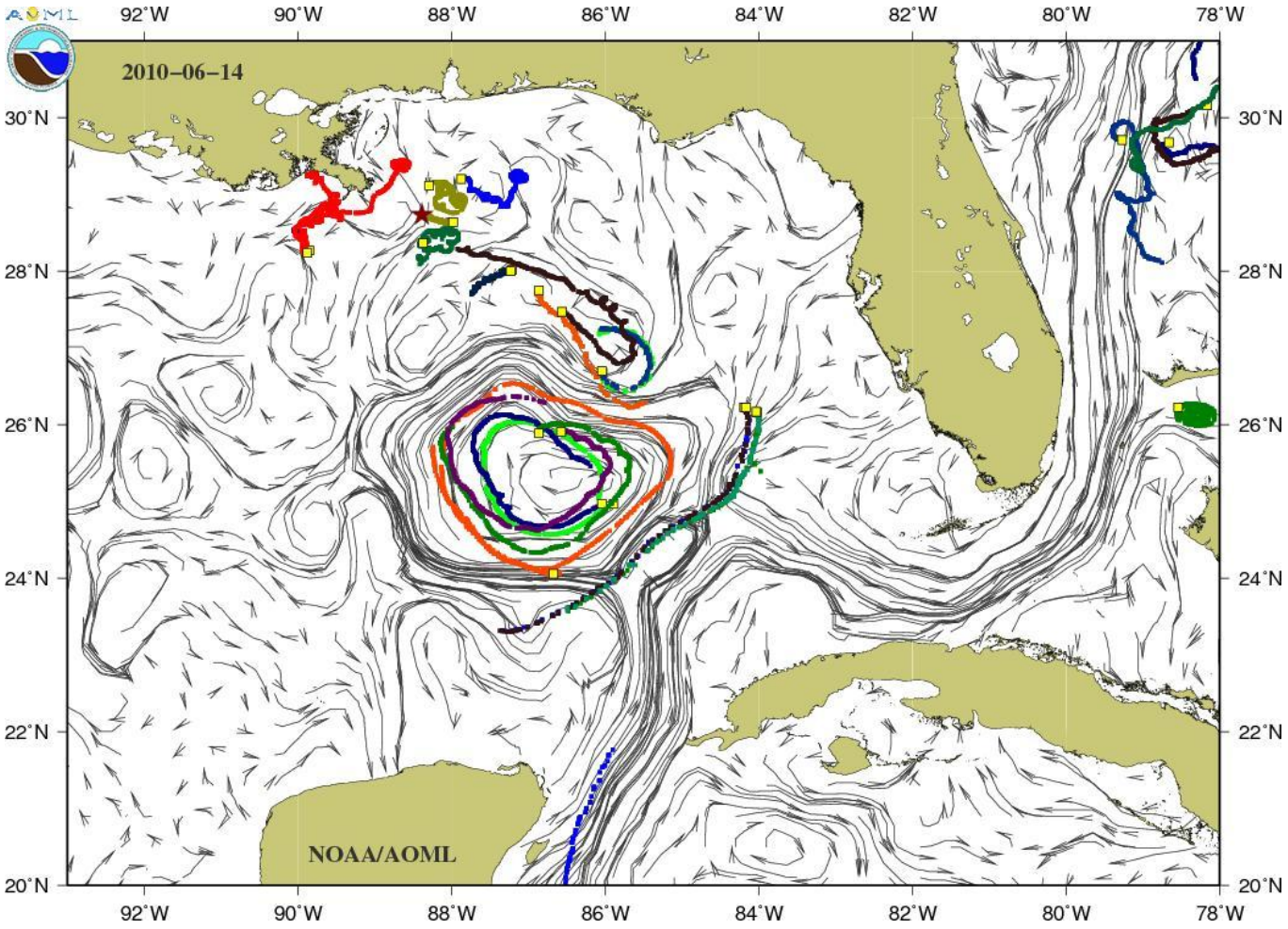
- Loop Current
- Protected Resources Updates
- Seafood Safety
- NOAA Assets
  - Vessels, Planes, Charters
  - IOOS



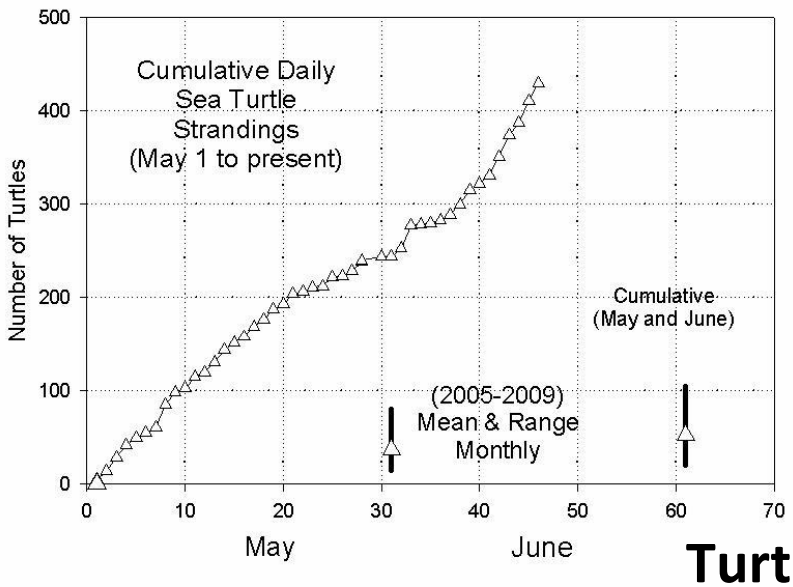
Loop Current Discussion for June 15, 2010

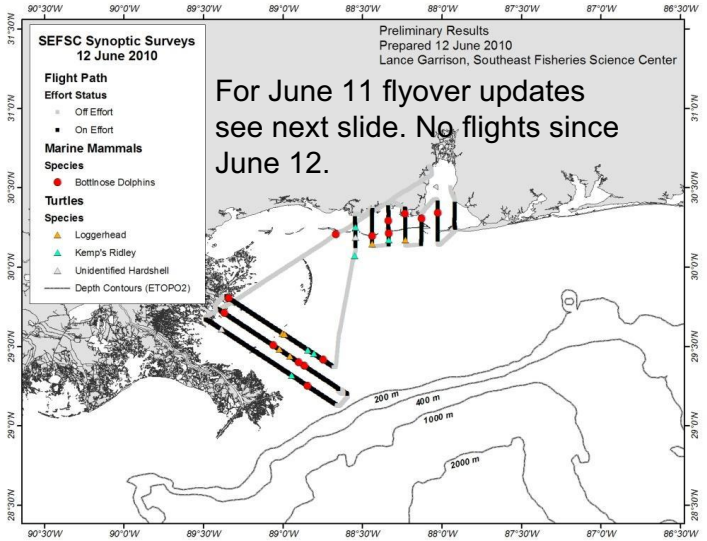
* The large loop eddy (Eddy Franklin) remains effectively isolated from the Loop Current.
• Continued potential for reattachment in the next few days to weeks.
• Inflow from Yucatan is bypassing eddy Franklin and flowing more directly into the Florida Straits.





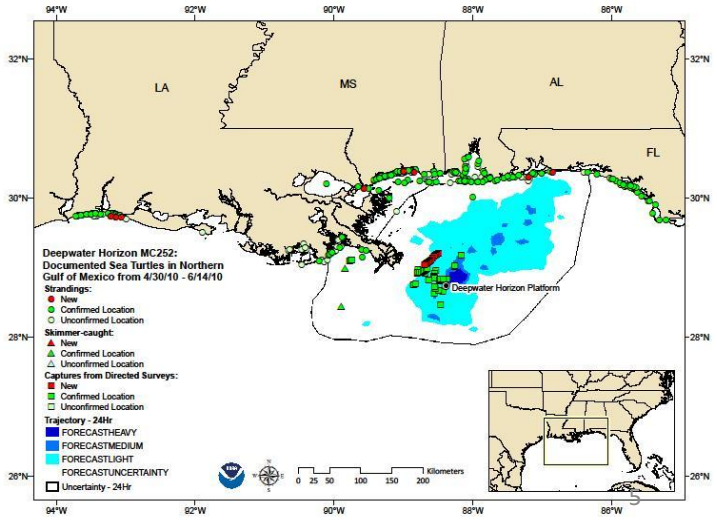
15 day surface drifter trajectories (starting points indicated by squares)

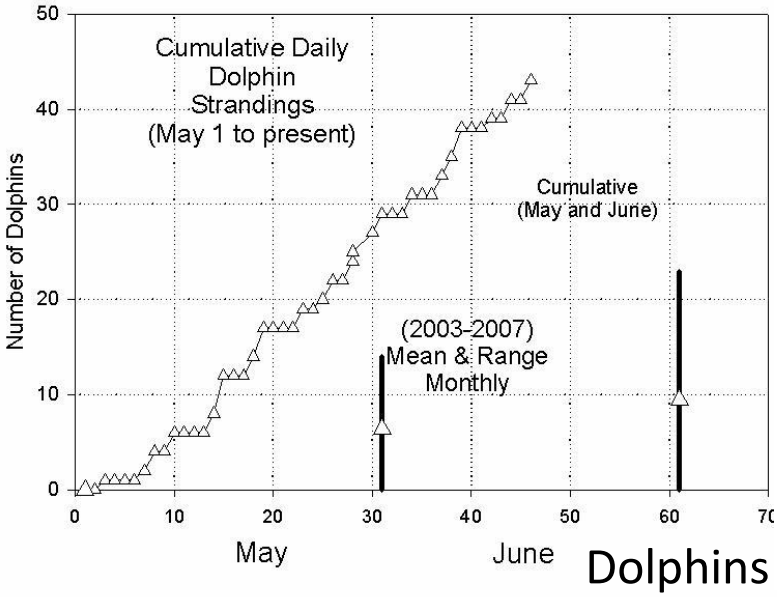


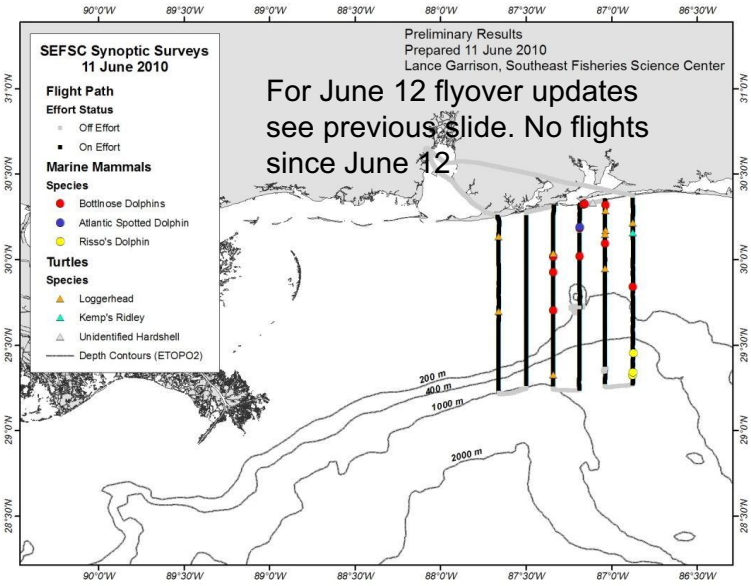


Turtles

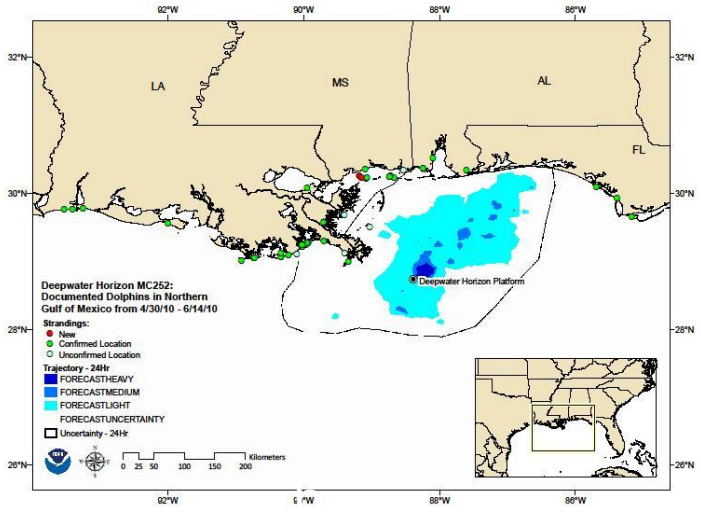
Turtle Status	
Total Verified Stranded Turtles	**430**
Total stranded turtles found dead	341
Total live stranded turtles currently in rehabilitation	78
Total live stranded turtles that died in rehabilitation	7
Total live stranded turtles released	4
Turtle Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	59
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	219

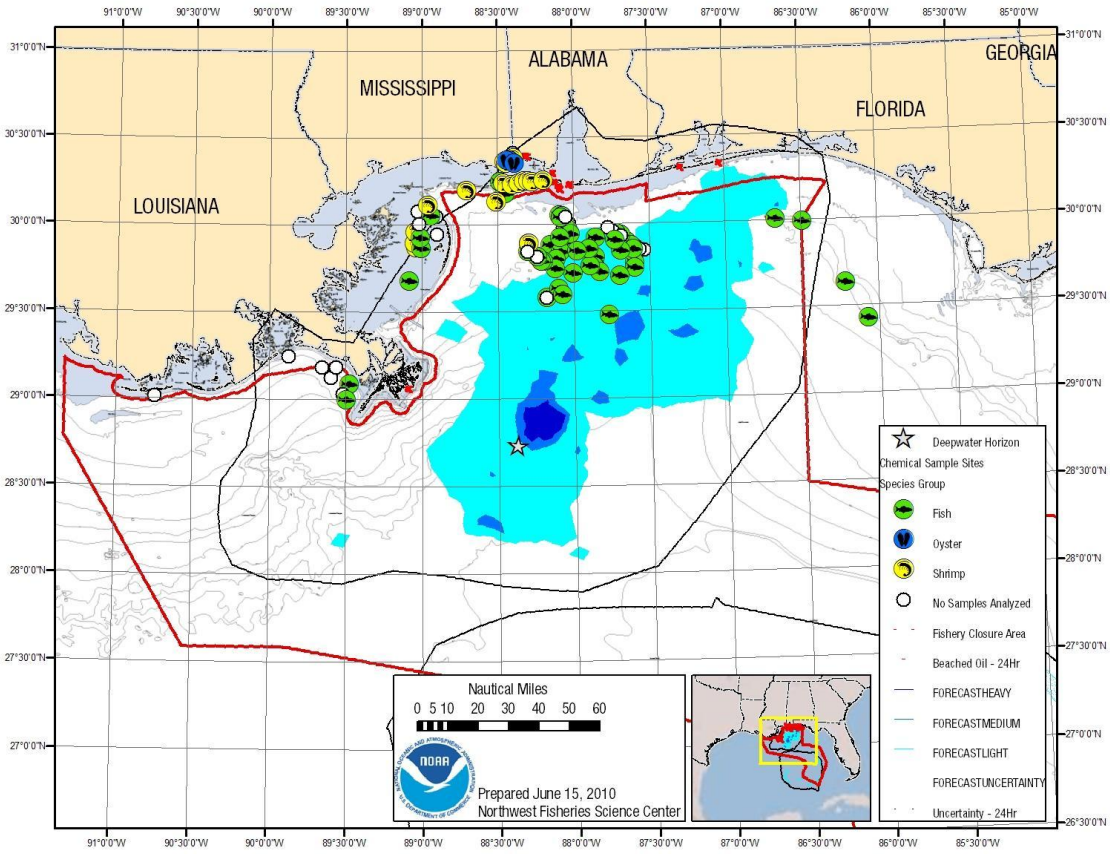






Dolphin Status	
Total Verified Dolphins	**43**
Total dead stranded dolphins	41
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	2
Total live released dolphins	0
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	15
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	8
Number of full necropsies performed	6
Verified strandings but animals not collected due to stage of decomposition or unable to recover	11
Carcasses to be necropsied, if decomposition stage warrants	3





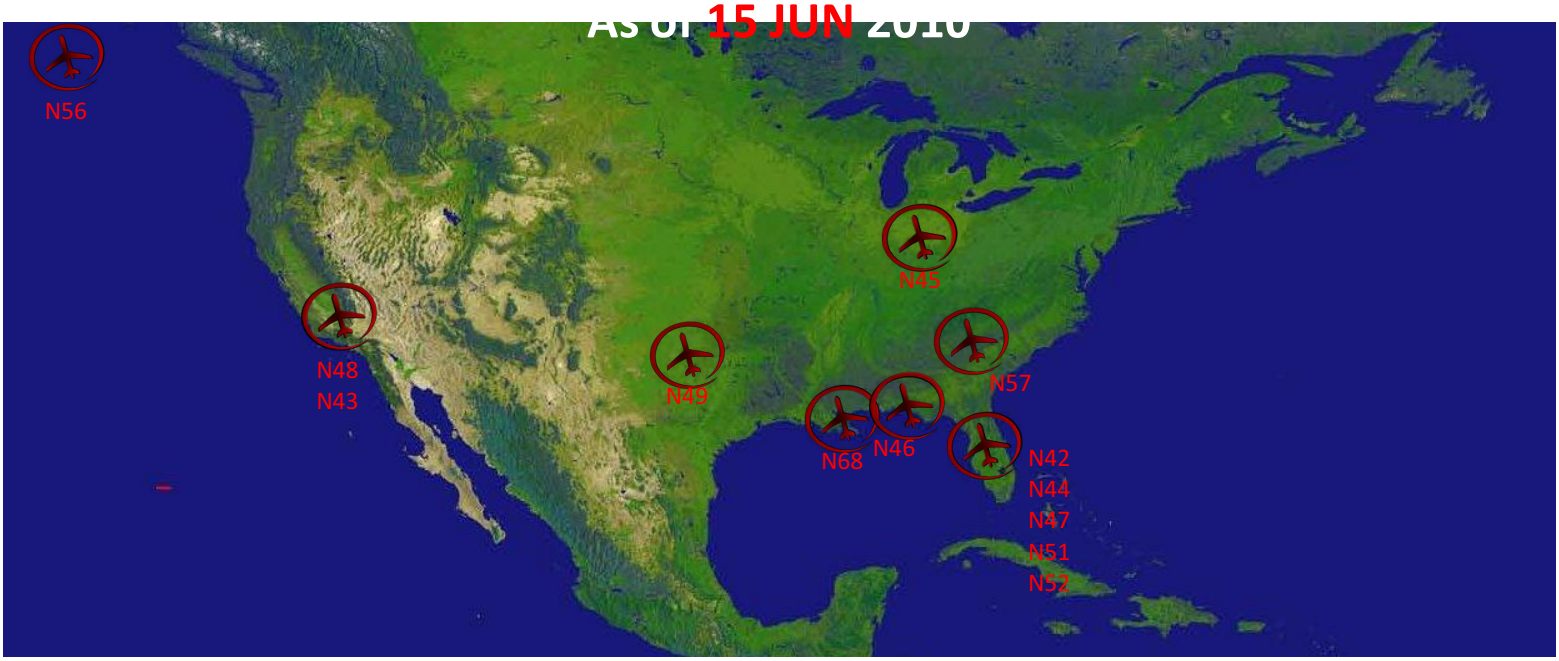
June 15, 2010

- GC/MS results of 26 fish and shellfish samples (composites) collected from the Gulf are posted on the NWFSC website [results summarized on next slide]--concentrations were well below levels of concern.
- Chemical analysis of 13 shrimp composite samples on GC/MS will be initiated today.
- Additional fish and shellfish samples are being processed for chemical analysis.
- Additional fish and shellfish will be sent from Pascagoula to the NWFSC for chemical analyses today.

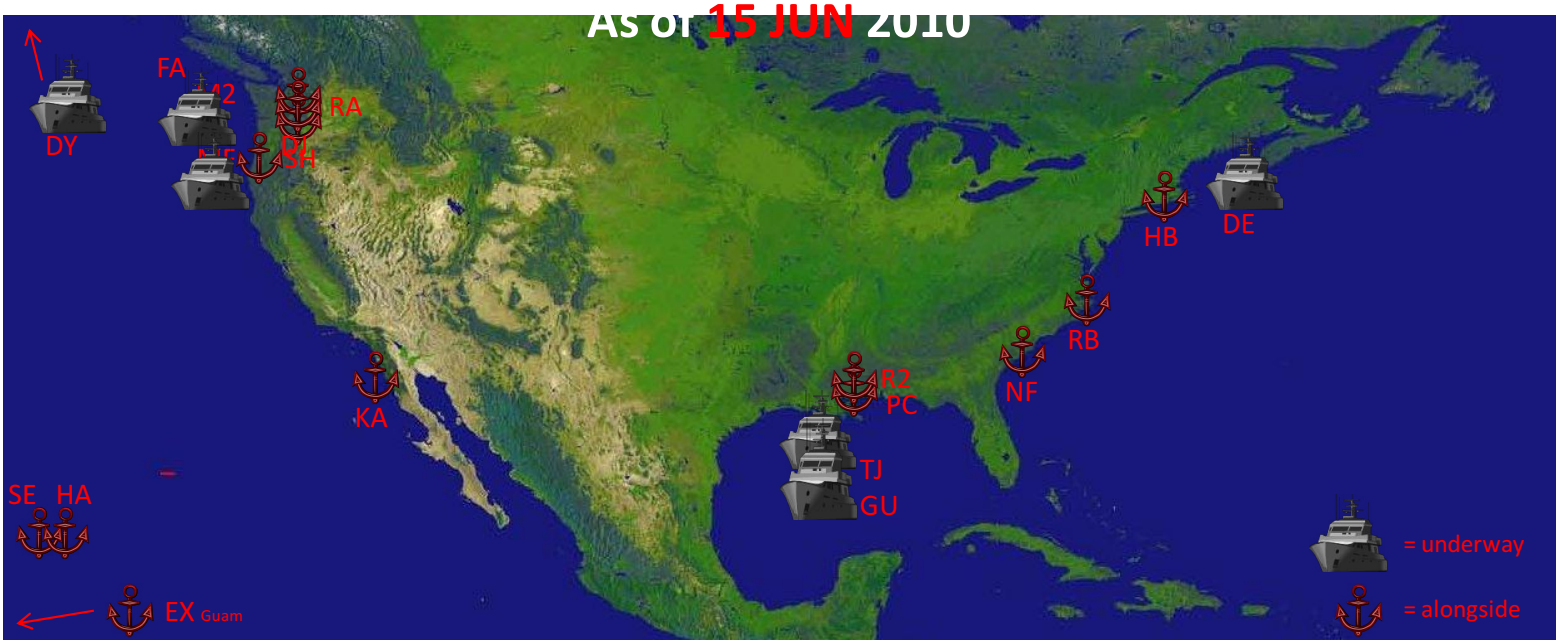
Concentrations (ng/g, wet weight) of selected polycyclic aromatic hydrocarbons measured in edible tissues of fish collected in the Gulf of Mexico region as part of the Deepwater Horizon MC Canyon 252- Seafood Safety Response 2010

Species	Region	Collection Date	Closure Area Status	NPH	FLU	ANT/PHN	FLA	PYR	BAA	CHR/Trphn	BaP
Red Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.6	<0.24	0.3	<0.14	<0.14	<0.21	<0.24	<0.21
Red Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.68	<0.23	0.33	<0.13	<0.13	<0.19	<0.22	<0.20
Lane Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.81	<0.24	0.35	<0.14	<0.14	<0.21	<0.25	<0.22
Lane Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.78	<0.22	0.34	<0.13	<0.13	<0.19	<0.22	<0.20
Red Snapper	Florida	18-May-10	Baseline	0.74	<0.21	0.3	<0.12	<0.12	<0.18	<0.21	<0.19
Red Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.69	<0.21	0.31	<0.12	<0.12	<0.18	<0.21	<0.19
Lane Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	0.87	<0.23	0.33	<0.14	<0.14	<0.21	<0.24	<0.21
Brown Shrimp	Northern Gulf of Mexico	22-May-10	Surveillance	0.79	<0.24	<0.24	<0.14	<0.14	<0.21	<0.24	<0.21
Red Snapper	Northern Gulf of Mexico	22-May-10	Surveillance	1.3	<0.20	0.42	<0.11	<0.11	<0.17	<0.20	<0.18
Brown Shrimp	Northern Gulf of Mexico	22-May-10	Surveillance	0.9	<0.27	<0.27	<0.15	<0.15	<0.23	<0.26	<0.24
Brown Shrimp	Northern Gulf of Mexico	20-May-10	Surveillance	0.91	<0.20	0.31	<0.13	<0.12	<0.19	<0.22	<0.20
Brown Shrimp	Northern Gulf of Mexico	22-May-10	Surveillance	1.1	<0.21	0.34	<0.13	<0.13	<0.19	<0.22	<0.20
Atlantic Croaker	Pascagoula, MS Sound	6-May-10	Baseline	0.61	0.41	0.62	<0.12	<0.12	<0.18	<0.21	<0.19
Atlantic Croaker	Pascagoula, MS Sound	6-May-10	Baseline	0.58	<0.23	0.42	<0.14	<0.13	<0.20	<0.24	<0.21
Brown Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.72	<0.20	0.24	<0.11	<0.11	<0.17	<0.20	<0.18
Brown Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.71	<0.21	0.29	<0.12	<0.12	<0.19	<0.22	<0.19
Brown Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.82	<0.25	0.26	<0.15	<0.15	<0.23	<0.26	<0.23
White Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.89	<0.23	0.28	<0.14	<0.14	<0.21	<0.25	<0.22
White Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.76	<0.22	0.31	<0.13	<0.13	<0.19	<0.22	<0.20
Brown Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.59	<0.26	0.31	<0.16	<0.15	<0.23	<0.27	<0.24
Brown Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.81	<0.18	0.32	<0.10	<0.10	<0.16	<0.18	<0.16
Atlantic Croaker	Pascagoula, MS Sound	13-May-10	Baseline	0.94	1	1.9	0.28	<0.12	<0.18	<0.21	<0.19
Atlantic Croaker	Pascagoula, MS Sound	13-May-10	Baseline	0.89	0.95	1.7	<0.16	<0.15	<0.23	<0.27	<0.24
White Shrimp	Northern Gulf of Mexico	2-May-10	Baseline	0.67	<0.27	<0.27	<0.16	<0.16	<0.24	<0.28	<0.25
Atlantic Croaker	Northern Gulf of Mexico	16-May-10	Surveillance	0.75	<0.26	<0.26	<0.15	<0.15	<0.23	<0.27	<0.24
Atlantic Croaker	Northern Gulf of Mexico	18-May-10	Surveillance	0.95	<0.20	0.28	<0.11	<0.11	<0.16	<0.19	<0.17

NPH = napthalene, FLU = Flourene, ANT/PHN = anthracene/phenanthrene, FLA = fluoranthene, CHR = chrysene, BaP = benzo[a]pyrene, BAA = benz[a]anthracene, PYR = pyrene

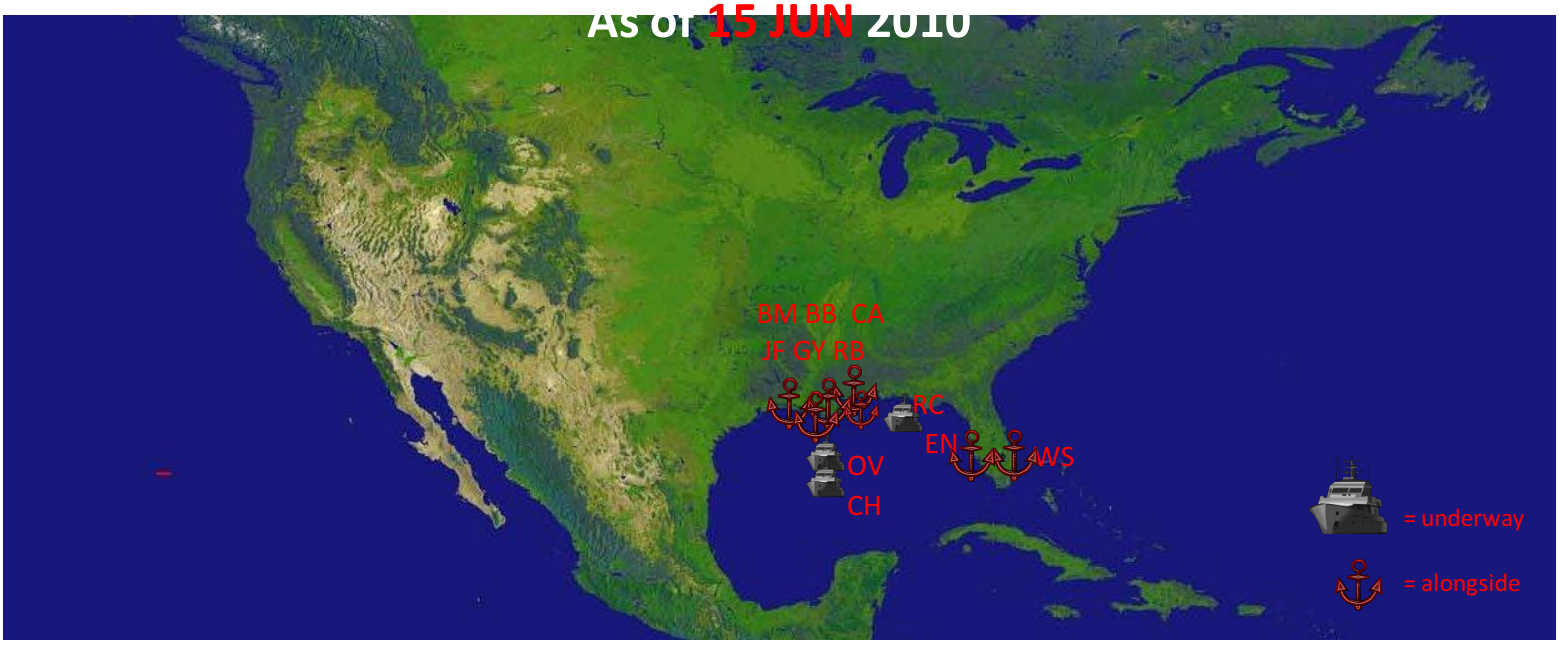


ID	Type	Status Today
N42	P-3	DWH Loop Current, No Flight Today, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Maintenance, Indianapolis, IN
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Ontario, CA
N49	G-IV	Tail Doppler Radar install/testing, Ardmore, OK
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Kodiak, AK.
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA



ID	Status Today
FA	Scheduled operations suspended by weather. Arrival 6/18 Port Angeles, WA
SH	Alongside Seattle, WA. Departure 06/25 for scheduled project
MF	Underway on scheduled project. Arrival 06/21 Seattle, WA.
DY	Underway on scheduled project. Arrival 6/24 Dutch Harbor, AK
HI	Alongside Pearl Harbor, HI. Departure 6/17 for scheduled project
M2	Underway on scheduled project. Arrival San Francisco 07/04
SE	Alongside Pearl Harbor, HI. Departure 7/6 for scheduled project
KA	Alongside San Diego, CA. Departure 7/8 for scheduled project
RA	Alongside Cascade, OR for shipyard repair period
DJ	Alongside Seattle, WA. Decommissioning on week of 08/02
EX	Underway on scheduled project. Arrival TBD

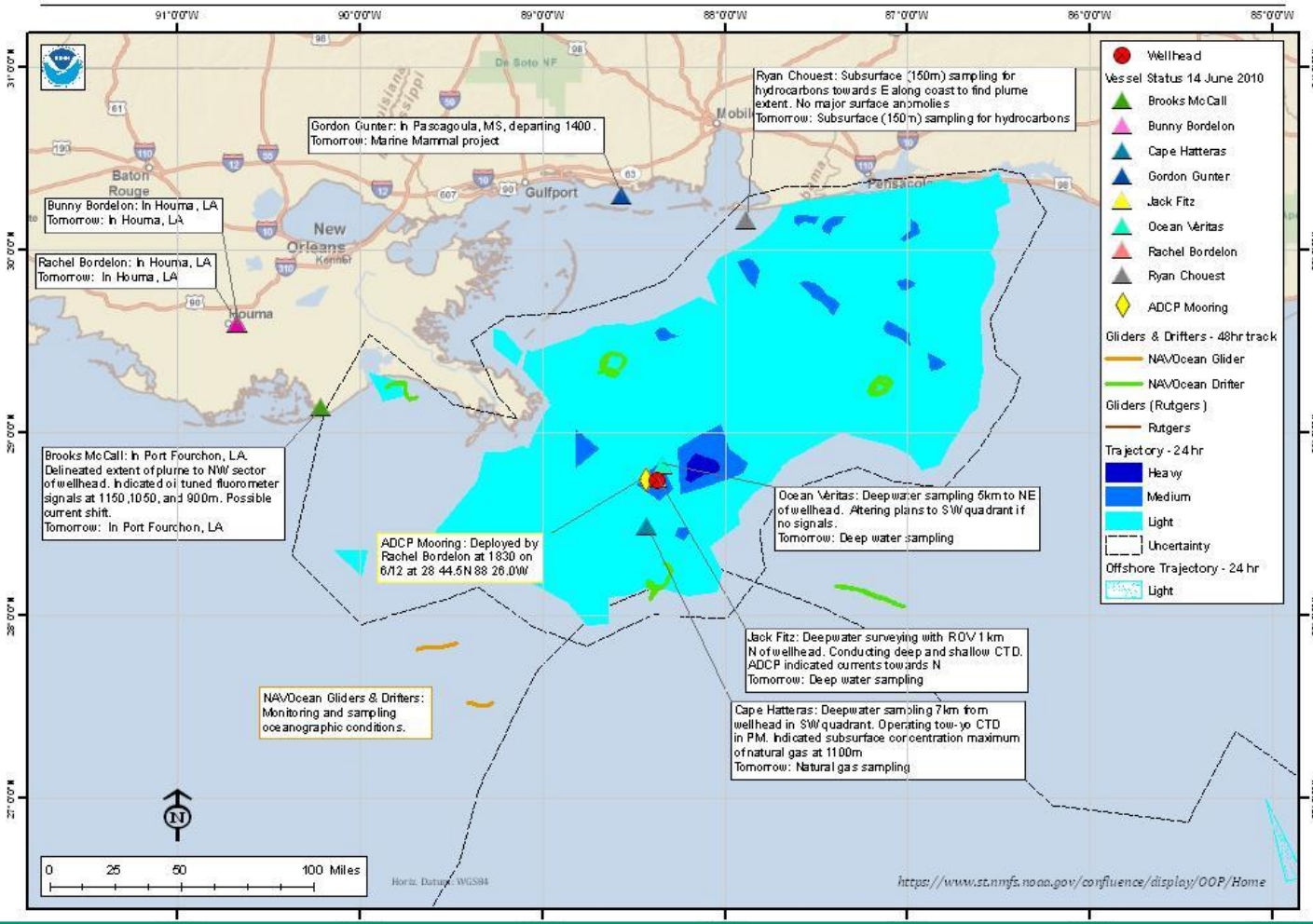
ID	Status Today
DE	ETD for DWH Seafood Safety surveys 06/16
TJ	ETD Galveston, TX for DWH acoustics and water sampling 06/15
HB	Alongside Newport, RI. Departure 07/07 for sea trials
NF	Alongside Charleston, SC. Departure 6/25 for scheduled project
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Alongside Pascagoula, MS. Departure 6/15 for mammal surveys near DWH
PC	Alongside Pascagoula, MS. Departure for DWH surveys TBD
R2	Alongside Pascagoula, MS. Departure 6/16 for sea trials and scheduled project



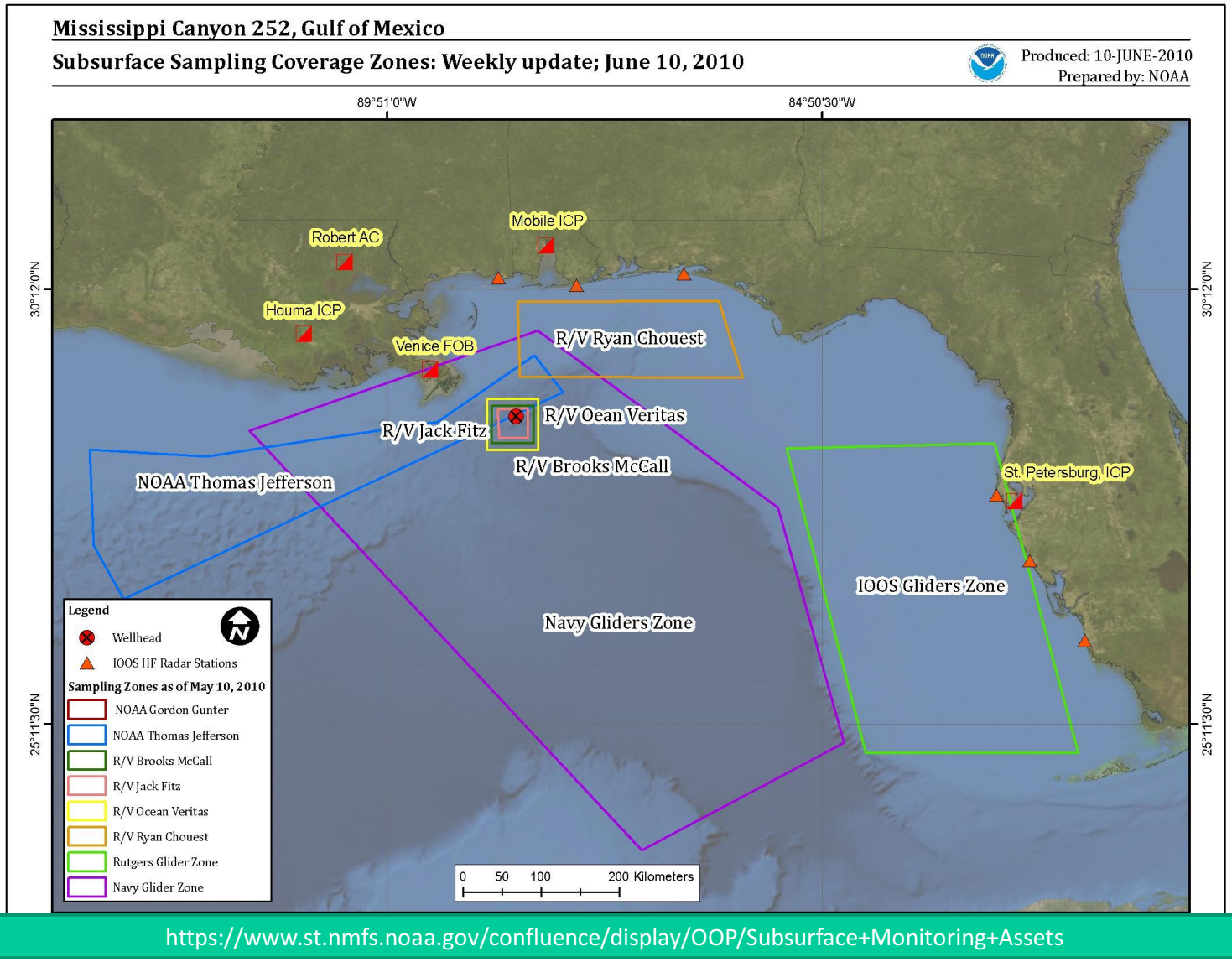
ID	Type	Status Today
BM	R/V Brooks McCall	In Port Fourchon, LA
BB	M/V Bunny Bordelon	In Houma, LA
CH	R/V Cape Hatteras	Deepwater sampling 1km W of wellhead, surface surveying for natural gas, tow-yo CTD sampling 5km SW of wellhead
CA	R/V Caretta	NOAA Small Boat alongside Pascagoula. DWH begin 21 June
EN	R/V Endeavor	In St. Petersburg,FL
GY	R/V Gandy	In Pascagoula for mechanical problems. Return to operations estimated 14 June
JF	R/V Jack Fitz	In Leeville, LA
OV	R/V Ocean Veritas	Deepwater sampling 5 km W of wellhead
RB	M/V Rachel Bordelon	In port Houma, LA
RC	R/V Ryan Chouest	Subsurface (150m) sampling for hydrocarbons towards E to find plume extent
WS	R/V Walton Smith	Inport Miami, FL

Date: 14-June-2010 | Subsurface Monitoring Ship Locations | NEARSHORE

Preliminary findings based on daily communication between assets and Subsurface Monitoring Unit | Deepwater Horizon, Gulf of Mexico



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Assets

Subsurface Monitoring Vessel Assignments

Vessel Assignments for June 15, 2010 to June 17, 2010

Vessel - MMSI	*Type*	*Compliment*	*June 15, 2010*	*June 16, 2010*	*June 17, 2010*
Brooks McCall 338257000	162 ft M/V	32	In Port Fourchon, LA	In Port Fourchon, LA, departing 1800 for deepwater sampling	Deep water sampling
Bunny Bordelon 366816890	150 ft OSV	16	In Houma	In Houma	In Houma
Cape Hatteras 366929330	135 ft R/V	24	Deep water sampling 1km W of wellhead. Surface surveying for natural gas. Tow-yo CTD sampling 5km SW of wellhead in PM	Deep water and natural gas sampling	Deep water and natural gas sampling
Endeavor 367017340	185 ft R/V		In St. Petersburg, FL	In St. Petersburg, FL	Departing St. Petersburg, FL for deep water ROV and sampling
Gordon Gunter 303913000	224 ft R/V	33	In Pascagoula, MS, departing 1230	Marine Mammal project	Marine Mammal project
Jack Fitz 366765580	165 ft OSV	26	In Leeville, LA	TBD	TBD
NAVOcean Sea Gliders	2 AUV's		Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions
Ocean Veritas 367116090	194 ft M/V	41	Deep water sampling 5km W of wellhead. Altering plans to 2km SW of wellhead if no signals. Moving back to NE late	Deep water sampling	Deep water sampling
Rachel Bordelon 367359570	150 ft OSV	20	In Houma, LA	In Houma, LA	In Houma, LA
Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	Subsurface sampling for hydrocarbons towards E along coast to find plume extent	Arriving Theodore, LA for crew change	In Theodore, LA
Thomas Jefferson 369958000	208 ft R/V	33	In Galveston, TX, departing 1300	Surveying in FGBNMS	Coastal surface and subsurface sampling

Document ID: 0.7.19.1945.2

Name	Role	Email
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	Ecosystem Impacts Back up	

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301-713-2239	[redacted]
301-713-3038 x 110	[redacted]
301-713-2239	[redacted]
301-734-1049	[redacted]
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e.burgess@noaa.gov	
301-713-7700	
301-763-8000 x 7202	
301-713-0524 x 197	[redacted]
206-780-1931	[redacted]
301-713-2367 x 159	[redacted]
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301-713-2367 x 159	[redacted]
301-734-1070	[redacted]
301-713-3038 x 110	[redacted]
301-713-1622 x 200	

Received(Date): Tue, 15 Jun 2010 17:39:12 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: DWH ACTIONS and UPDATES 6.15.2010
To: DWH leadership <DWH.Leadership@noaa.gov>

NRDA Activities Report_6_15_10.doc
DWH ACTIONS and UPDATES 6.15.2010.xls
MMST Health and Stranding Update 06-14-10 DRAFT.doc
2010_0615_Seafood Safety Daily Report.docx
Science box staffing contacts.xlsx
NOAA Science Briefing Jun 16.pdf
dispersants101_w graphic.pdf
Proposed OMAO Asset DWH Response Schedule 061510.doc
OMAO_Assets_Gantt_Chart_061510.xlsx

PRIORITY	STATUS UPDATE
RESPONSE OPERATIONS - NIC/ICC/NRT	· Fire on ENTERPRISE: A small fire visible at the top of the derrick on th temporarily shut down the LMRP containment operation today. Prelimina which was quickly extinguished, was caused by a lightning strike. Operati afternoon, after final safety and operational assurance inspection. · Source Control: Top Hat is listing approximately 12 degrees. Technician degree of list, but are not planning any action since the system has been co approximately 15,000 barrels of oil per day. Today's shut down will reduc hour period by about 1,500 barrels. · Marine Mammals: NOAA Ship PISCES reported a dead, 25ft long spern south of Pascagoula, Mississippi. There is no oil in the vicinity of the whal are feeding on the carcass. NRT – No call today NIC Activities · JAG/SDOT: Draft charter for the SDOT Team sent to the JAG Chair. M and SDOT to discuss organization of the JAG and clearance of various pro
	use of www.geoplatform.gov/gulfresponse continues to increase (3.4 milli Provided overview of geoplatform.gov to DHS-OMB DWH Integrated Ser scheduled to Team for next Tuesday. DHS standing up new Unified Command .gov site by this weekend, and w migration plans. All NOAA Line Offices, NOAA GC and NOAA OCIO met with DOJ lega to the preservation of records, identification of systems, and collection of Litigation Hold. NOAA will provide DOJ with a draft template of the des identify NOAA systems on which DWH data is being held and preserved. to between DOJ and NOAA, a data call will be issued from the NOAA CI No update from EPA on air/water quality availability for public ERMA ap inquiring.
SCIENCE	June 16th Science Briefing.- attached. Dispersant 101 as cleared through the science box Updated Staffing (Oceanography and Ecosystem Impacts leads were left o
LMR	Fisheries Closure * There were no modifications to the closed area in the Gulf EEZ for Ju

remains 78,264 sq mi (202,703 sq km), or about 32% of the GOM EEZ.
Louisiana Department of Wildlife and Fisheries announced the following c
commercial fishing in portions of inside waters east and west of the Missis
Parish effective June 14, 2010. The area was originally closed as a precau
recent information from shoreline cleanup assessment teams indicates no o

o Inside Waters West of Mississippi River: The portion of state insi
inside/outside shrimp line west of the Mississippi River from the southern
degrees 28 minutes 13.4 seconds west longitude westward to 89 degrees 3(
longitude near Sandy Point.

o Inside Waters East of Mississippi River :The portion of state inside
inside/outside shrimp line located south and east of the eastern shore of Ba
eastward to the eastern shore of Main Pass.

o Territorial Sea East of Mississippi River: The portion of state outsi
Mississippi River seaward of the inside/outside shrimp line west of 89 deg
west longitude and south of 29 degrees 21 minutes 32.7 seconds north latit

Seafood Inspection

* Participated in an interagency conference call regarding consumption
have been reached and the protocol tables are being modified.
* Steven Wilson is drafting a dockside monitoring plan for review by th
* FDA has requested SIP to draft HACCP plan templates to be provided
plans for detection of oil. This is a portion of FDA's marketplace surveillar
* Processing seafood safety samples collected off Western Louisiana by
Beau Rivage.

LMR (2)

* Manually generated & QA-ed seafood sample status summary from sea
spreadsheets and related documentation.
* Provided updated seafood safety sample metrics to Nancy Thompson
* Worked on NSIL's DWH response cost estimates and expenditures wi
describe the activities.
* Evaluating data received to date in regards to seafood safety sample re
for purpose of determining data base structure and format in order to desig
and tracking system.
* Complete seafood inspection report attached.

Marine Mammal and Sea Turtle Health and Stranding

PISCES reported a dead, 25ft long sperm whale today. The whale's loc
of Pascagoula,
Mississippi.
turtles verified to date within the “designated spill area” (increase of 19 fro

* 371 stranded (increase of 8 from June 13)
  - o 338 of the stranded were found dead (increase of 8 from June 13)
  - o 33 of the stranded were found alive (no change from June 13)
  - o 4 recovered alive but died in rehab (no change from June 13)
  - o 4 turtles released alive (no change from June 13)
  - o 25 live turtles in rehabilitation (no change from June 13)
* 59 turtles collected during directed turtle sampling efforts (increase of
  - o 53 live turtles in rehabilitation (increase of11 from June 13)
  - o 3 turtles collected dead (no change from June 13)
  - o 3 turtles died in rehabilitation (no change from June 13)

LMR (2)

* 219 carcasses to be necropsied, if decomposition stage warrants (increas
* Of the initial 75 full or partial necropsies completed, the two primary c
death of the non-oiled recovered turtles are forced submergence or acute tc
pending.
* To date, visible evidence of oil has been documented externally on 4 d
live stranded turtles(2 of which were caught in skimming operations).
* To date, visible evidence of oil has been documented externally on 56
turtle captured during directed turtle surveys.
* 43 dolphins have been verified to date within the "designated spill area
13).
o 41 were dead stranded dolphins (increase of 2 from June 13)
o 11 verified strandings but animals not collected due to stage of dec
recover (increase of 2 from June 13)
* The complete health and stranding report, turtle stranding map, and do
attached.

NRDA

1. Technical Working Group Updates
Shoreline: Four teams went out in the field to complete pre-assessment sho
Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Po
Forensic oil sampling occurred in West-South Terrebonne Bay and West-N
CRMS Team observed light sheen observed on North shore of Lake Washi
obtained at CRMS 0174 due to the presence of oil. Sheen on vegetation w
marsh with approximately 100cm penetration.
Team 1- No report available
Team 2 evaluated the southern portion of Wilkerson Canal, eastern portion
northeastern shore of Wilkerson Bay near Wilkerson Canal. Heavy oil obs
of Wilkerson Canal heading south, beginning just south of stationary barge
Wilkerson Bay. Light oil and sheen observed along northern island surrou
Heavy oil observed along southern shoreline of island surrounding St. Mar
along most shorelines.
Team 3 assessed shoreline and marsh areas west of Marsh Island. All way
near the westernmost limits of SCAT oil mapping data in the area, progres
Data obtained during the day's field effort was found to coincide with exis
with the exception of the area mapped as "moderate" coverage immediatel
Lock. No oil was observed in this area.
Team 4 – no report available
Sample Intake Teams – Samples processed at shoreline as of 6/14/10:
· Chain of Custody's processed: 260
· Number of Bottles: 2700
· Jack Fitz cruise experienced mechanical problems which cancelled the sa
(6/14) and we have rescheduled for 6/15 rendezvous with vessel in Port.

NRDA (2)

Chemistry: As of June 14th, approximately 4500 samples have been colle
baseline and pre-assessment data collection. This total consists of approxi
20% sediment samples, and 5% or less of tissue, oil (tarballs), oil on water
Water Column: NRDA sampling activities are ongoing aboard 2 vessels..
NRDA sampling activities are ongoing aboard two vessels:
· Brooks McCall: Conducting deep water sampling 2.5 km northwest of w
· Jack Fitz: Returning to port due to mechanical problems
· Ocean Veritas: Deep water sampling 5km W of wellhead. Altering plans

	signals. Indicated weak plume 5km N of wellhead at 4 of 5 stations at 110 Human Use: Conducted boat ramp counts at 3 ramps in Central FL, 2 in S 3 in LA, 1 in MS, and 1 in AL. Shore counts and intercepts in MS. Overfli canceled. SAV: Currently identifying long-term sampling dates and sites for injury Marine Mammals: · The team flew a NRDA survey today to collect aerial sightings of marine primary oil spill zone. Six bottlenose dolphins were seen in light sheen an were seen in light sheen. · Marine Mammal survey team aboard Gordon Gunter is underway on a sp survey.
ASSETS AND PLATFORMS	The following digital files are attached. Information is current as of Date 1. NOAA Platform Powerpoint showing current mapped locations of asse 2. OMAO Assets Excel Gantt Chart showing projects assigned to each as 3. Proposed OMAO Asset DWH Response Schedule Word document identifying impacts to NOAA projects should OMAO assets be tasked.
REGIONAL	No updates
LEGISLATIVE / INTERGOV'T AFFAIRS	No updates
COMMS / PUBLIC AFFAIRS	*Planning seafood safety media day at Pascagoula Lab, date TBD. *Answered several follow up press calls on ERMA / GeoPlatform.gov. *Holding second ERMA /GeoPlatform.gov webinar for select media, Wed *Preparing roll out (date TBD) of NOAA's long-term modeling of oil mov clearance), press release and supporting Q&A (in development) and media and David Holst as lead contact points) * Working on data release policy with Science Team and DWH Staff * JIC put out update release on this week's TJ, Gunter, and Pisces missions.
EXTERNAL ENGAGEMENT	External Affairs received final comments on the draft fact sheet on volunte JIC approval for the document. Will be posted on the External Affairs wel interagency group for their sites. Reached out to LaDon Swann, Bill Walke concerns of the academic community in the Gulf region. Will use this and strategy for continued outreach to that sector. Met with Constituent Affairs outreach efforts to Gulf and to coordinate line office participation. Reache organizer for the June 17th Gulf Oil Spill Disaster Response Summit being Contacted the Houma JIC to get more information on the BP Community I Louisiana over the past week and will continue this week. The Expos are b Houma JIC by contractors hired by BP. Federal and state agency participar through staff stationed at the Houma JIC. Spoke with Paul Sadowski, BP Spoke with Rebecca Hoff, NOS OR&R In the case for NOAA - this is bein NOS OR&R Science Support Coordinator (SSC - Jordan Stout last week), week) and the Biologic Support Representative (Rebecca Hoff last week). position that coordinates to support the USCG - long before the BP oil spil and Biologic Support are tied to the Incident Command. Additional contact made with Margaret 'Jody' Cottrill at the Unified Area

along additional contact information regarding the Expos and the plans for
to put together a Speakers Bureau. Requests for speakers at following even
n LSU Food and Water Safety Executive Summit Meeting – Baton Rouge
n Jackson County Republican Women's Group - Pascagoula, MS - July 12
and Ballroom Kiwanis Club - Loc: TBD - July 14, 2010 Reached out to FE
Affairs, Gwen Camp requesting to speak with her about FEMA's plans or c
Gulf Coast with regards to hurricane season preparedness. Complaint e-ma
10 new emails over the weekend and Monday. We have responded to 7 of
fix suggestions, trajectory map mistakes and general complaints.

DATA INFORMATION

IA/ INTERNATIONAL AFFAIRS

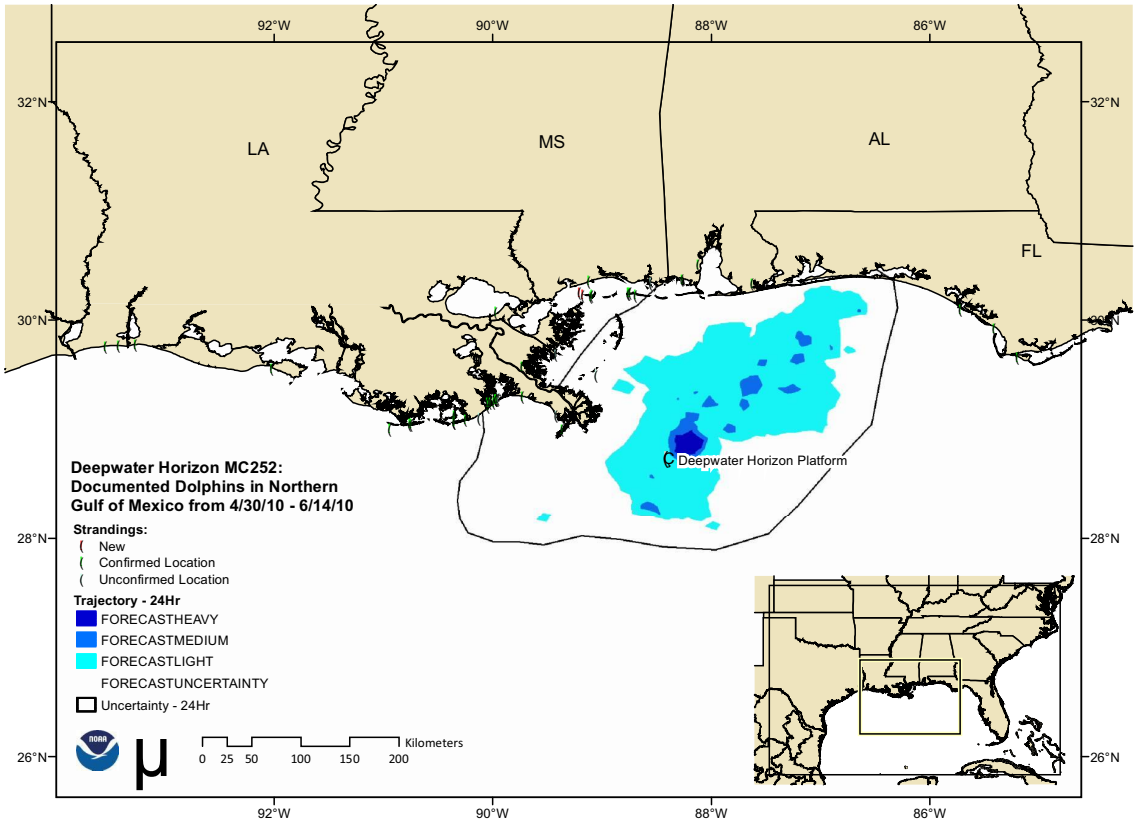
1. Responded to State Department/Cuba Desk questions about the loop cur
Desk is expecting a large delegation later this week to discuss migration is
for oil spill questions. They have further questions about sub-surface plum
Responses being worked with DWH staff.
2. A representative from the U.K. Center for Environmental Fisheries and
an MOU with NOAA on marine science, ocean and human health. To res
offering to host a scientific meeting to promote science exchange, goodwil
collaboration. The information was passed to Dr. Robinson and Dr. Mura
3. Awaiting decision by Dr. Lubchenco regarding possible meeting with D
delegation to Dr. Robinson or someone else. Dr. Alvarez' contact informa
email address) passed to PCO for quick contact after decision.
4. Received response from Brendan Bray on arrangements for possible hos
Bahamian scientist to interact with modelers in Seattle. A likely time fran
was suggested in order to assure time to process the required foreign visito
currently have the resources to pay for travel.
5. The weather advisory regarding a low pressure system which may devel
passed to State along with the National Hurricane Center URL. The syster
Windward Islands.
Key Bullets
· Assisting Cuba Desk at State Department prepare for a visit from a large
is expected to be raised.
· Continuing a review of arrangements and accommodations needed to sup
scientist to Seattle to interact with modelers. OR&R not able to pay trave
· U.K. offer of collaboration passed to Dr. Robinson & Dr. Murawski.
· Awaiting decision regarding meeting with Dr. Alvarez (Mexico)

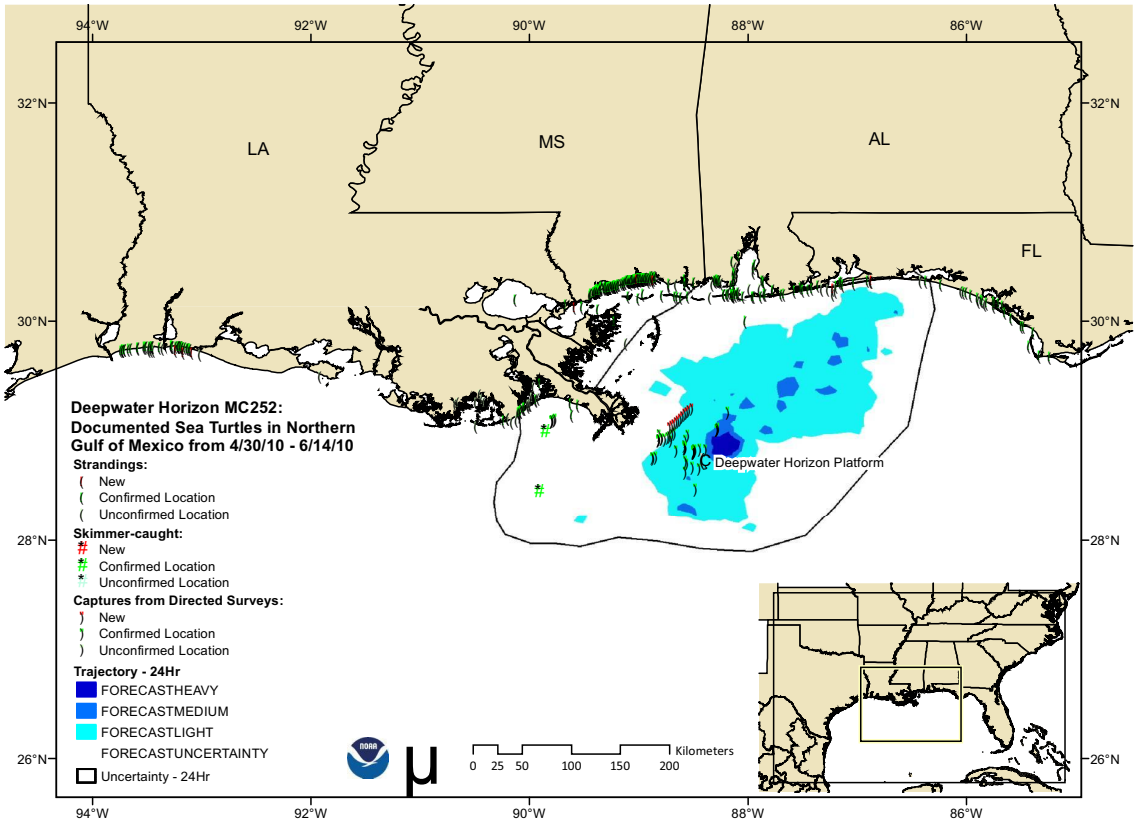
LEGAL / GC

No updates

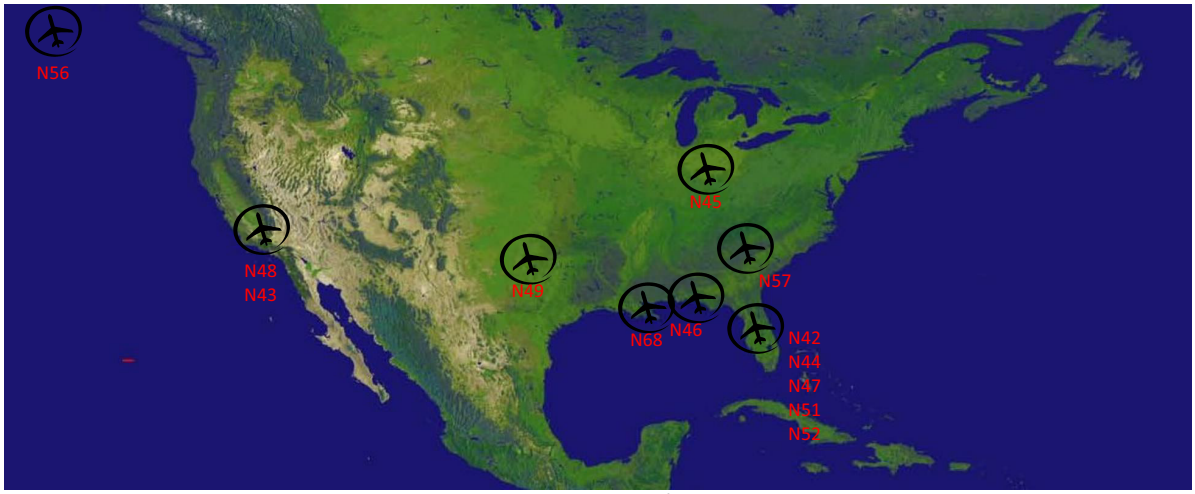
POLICY / BUDGET

No updates


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/14/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
0 25 50 100 150 200
Kilometers


94°W
92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/14/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
0 25 50 100 150 200
Kilometers

NOAA Aircraft Positions
As of 15 JUN 2010



ID	Type	Status Today
N42	P-3	DWH Loop Current, No Flight Today, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Maintenance, Indianapolis, IN
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Ontario, CA
N49	G-IV	Tail Doppler Radar install/testing, Ardmore, OK
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Kodiak, AK.
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

NOAA NRDA Activities Report - June 15, 2010

(Reporting Activities from June 14, 2010)

1. Technical Working Group Updates

Shoreline: Four teams went out in the field to complete pre-assessment shoreline surveys at Pelican Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Point Chenier/Bay Island. Forensic oil sampling occurred in West-South Terrebonne Bay and West-Northwest Terrebonne.

CRMS Team observed light sheen observed on North shore of Lake Washington. No baseline data was obtained at CRMS 0174 due to the presence of oil. Sheen on vegetation was approximately 150 yards of marsh with approximately 100cm penetration.

Team 1- No report available

Team 2 evaluated the southern portion of Wilkerson Canal, eastern portion of St. Mary's Point, and the northeastern shore of Wilkerson Bay near Wilkerson Canal. Heavy oil observed along western shoreline of Wilkerson Canal heading south, beginning just south of stationary barge until the beginning of Wilkerson Bay. Light oil and sheen observed along northern island surrounding St. Mary's Point. Heavy oil observed along southern shoreline of island surrounding St. Mary's Point. Boom was present along most shorelines.

Team 3 assessed shoreline and marsh areas west of Marsh Island. All waypoints were collected starting near the westernmost limits of SCAT oil mapping data in the area, progressing in an eastward direction. Data obtained during the day's field effort was found to coincide with existing SCAT mapping data, with the exception of the area mapped as "moderate" coverage immediately west of the Freshwater Lock. No oil was observed in this area.

Team 4 – no report available

Sample Intake Teams – Samples processed at shoreline as of 6/14/10:

- Chain of Custody's processed: 260
- Number of Bottles: 2700
- Jack Fitz cruise experienced mechanical problems which cancelled the sample intake team last night (6/14) and we have rescheduled for 6/15 rendezvous with vessel in Port.

Chemistry: As of June 14th, approximately 4500 samples have been collected to support NRDA baseline and pre-assessment data collection. This total consists of approximately 70% water samples, 20% sediment samples, and 5% or less of tissue, oil (*tarballs*), oil on water product, and dispersant.

Document ID: 0.7.19.1879.1

Water Column: NRDA sampling activities are ongoing aboard 2 vessels..

NRDA sampling activities are ongoing aboard two vessels:

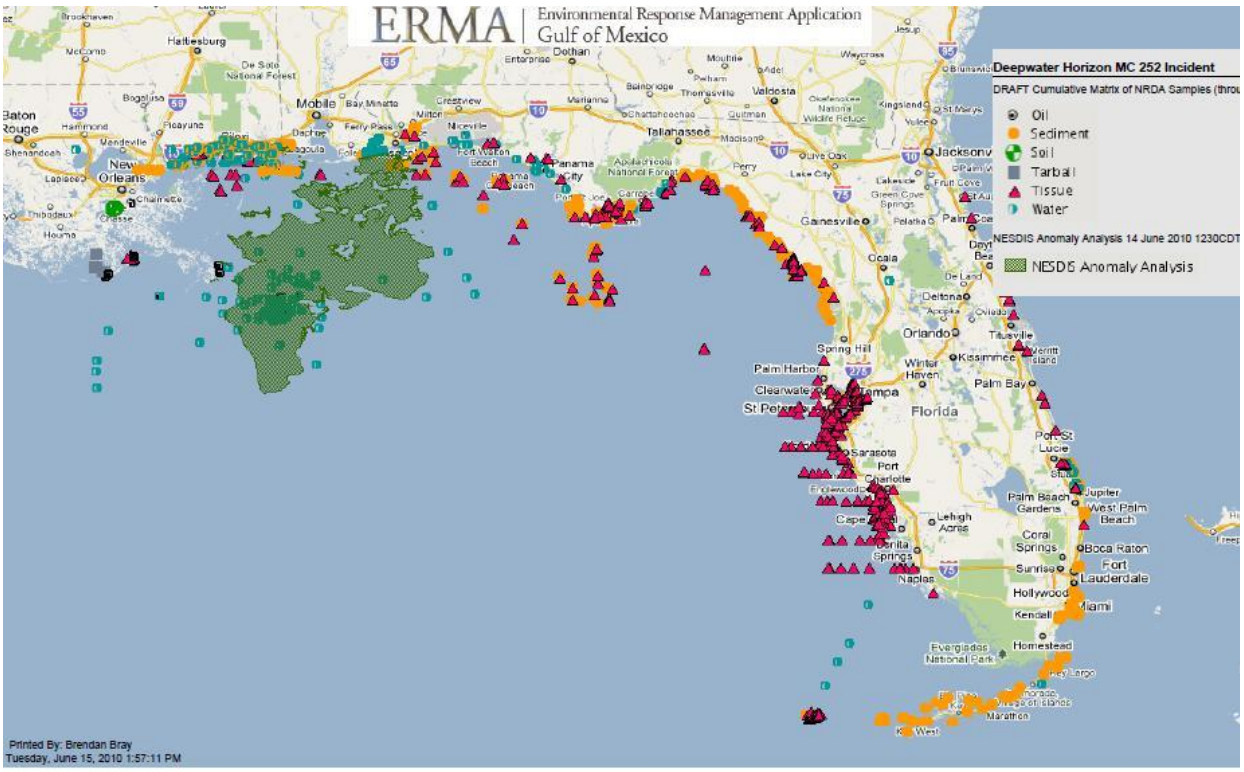
- **Brooks McCall:** Conducting deep water sampling 2.5 km northwest of wellhead, moving southwest.
- **Jack Fitz:** Returning to port due to mechanical problems
- **Ocean Veritas:** Deep water sampling 5km W of wellhead. Altering plans to 2km SW of wellhead if no signals. Indicated weak plume 5km N of wellhead at 4 of 5 stations at 1100m.

Human Use: Conducted boat ramp counts at 3 ramps in Central FL, 2 in Southern FL, 3 in Western FL, 3 in LA, 1 in MS, and 1 in AL. Shore counts and intercepts in MS. Overflight along north Gulf coast was canceled.

SAV: Currently identifying long-term sampling dates and sites for injury assessment phase.

Marine Mammals:

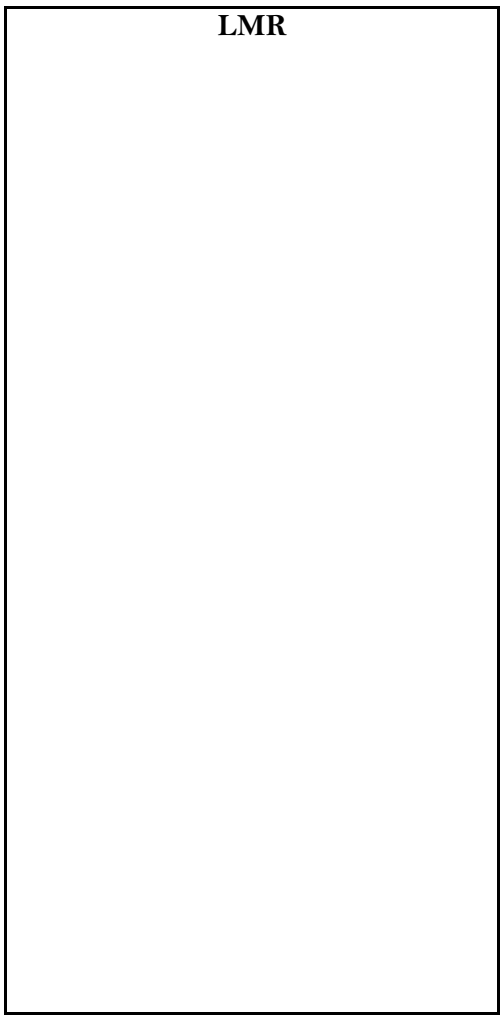
- The team flew a NRDA survey today to collect aerial sightings of marine mammals and turtles in the primary oil spill zone. Six bottlenose dolphins were seen in light sheen and two unidentified dolphins were seen in light sheen.
- Marine Mammal survey team aboard Gordon Gunter is underway on a sperm whale preassessment survey.

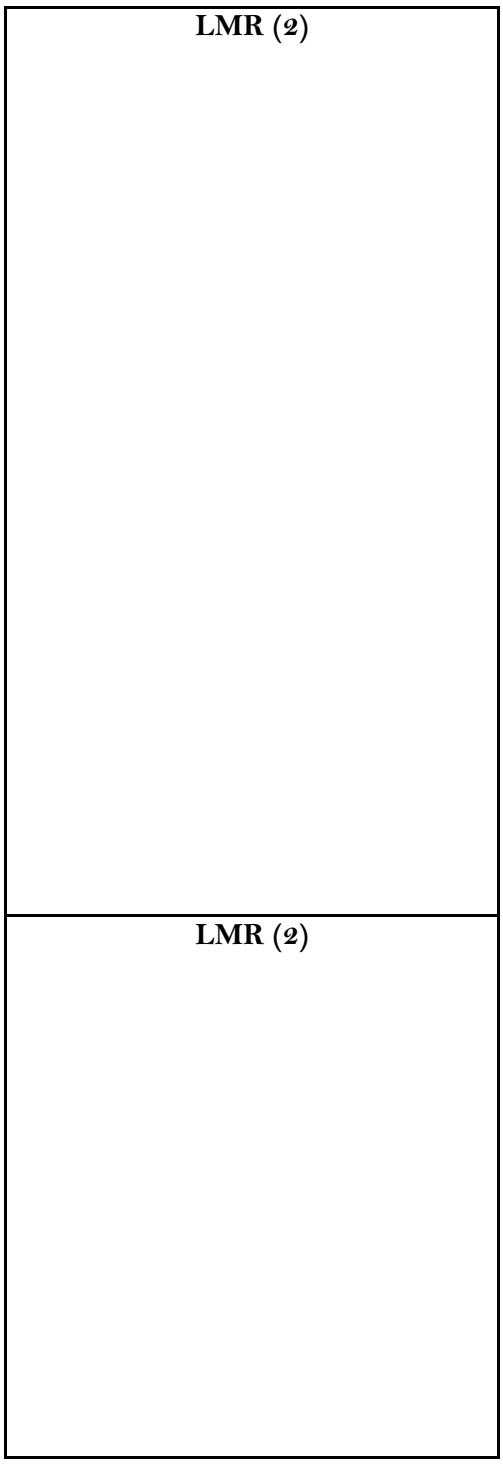


Environmental Response Management Application _Sampling Overview_06-15-2010

Document ID: 0.7.19.1879.1

PRIORITY
RESPONSE OPERATIONS - NIC/ICC/NRT
SCIENCE


LMR


LMR (2)

LMR (2)

NRDA

NRDA (2)

ASSETS AND PLATFORMS
REGIONAL
LEGISLATIVE / INTERGOV'T AFFAIRS
COMMS / PUBLIC AFFAIRS

EXTERNAL ENGAGEMENT

DATA INFORMATION

IA/ INTERNATIONAL AFFAIRS
LEGAL / GC
POLICY / BUDGET

STATUS UPDATE

• **Fire on ENTERPRISE:** A small fire visible at the top of the derrick on the Discoverer ENTERPRISE temporarily shut down the LMRP containment operation today. Preliminary review indicates the fire, which was quickly extinguished, was caused by a lightning strike. Operations should resume this afternoon, after final safety and operational assurance inspection.

• **Source Control**: Top Hat is listing approximately 12 degrees. Technicians continue to monitor the degree of list, but are not planning any action since the system has been consistently recovering approximately 15,000 barrels of oil per day. Today's shut down will reduce the recovery of oil in this 24-hour period by about 1,500 barrels.

• **Marine Mammals:** NOAA Ship PISCES reported a dead, 25ft long sperm whale today 150 miles due south of Pascagoula, Mississippi. There is no oil in the vicinity of the whale, but numerous tiger sharks are feeding on the carcass.

NRT – No call today

NIC Activities

• **JAG/SDOT:** Draft charter for the SDOT Team sent to the JAG Chair. Meeting today between JAG and SDOT to discuss organization of the JAG and clearance of various products..

June 16th Science Briefing.- attached.

Dispersant 101 as cleared through the science box

Updated Staffing (Oceanography and Ecosystem Impacts leads were left off)

Fisheries Closure

* There were no modifications to the closed area in the Gulf EEZ for June 15, 2010. The closed area remains 78,264 sq mi (202,703 sq km), or about 32% of the GOM EEZ.

Louisiana Department of Wildlife and Fisheries announced the following opening to recreational and commercial fishing in portions of inside waters east and west of the Mississippi River in Plaquemines Parish effective June 14, 2010. The area was originally closed as a precautionary measure. The most recent information from shoreline cleanup assessment teams indicates no oil in these areas.

o Inside Waters West of Mississippi River: The portion of state inside waters north of the inside/outside shrimp line west of the Mississippi River from the southern shore of Red Pass at 89 degrees 28 minutes 13.4 seconds west longitude westward to 89 degrees 30 minutes 12 seconds west longitude near Sandy Point.

o Inside Waters East of Mississippi River :The portion of state inside waters inshore of the inside/outside shrimp line located south and east of the eastern shore of Baptiste Collette Bayou eastward to the eastern shore of Main Pass.

o Territorial Sea East of Mississippi River: The portion of state outside waters east of the Mississippi River seaward of the inside/outside shrimp line west of 89 degrees 11 minutes 21 seconds west longitude and south of 29 degrees 21 minutes 32.7 seconds north latitude.

Seafood Inspection

* Participated in an interagency conference call regarding consumption rates. Agreement appears to have been reached and the protocol tables are being modified.

* Steven Wilson is drafting a dockside monitoring plan for review by the NMFS management.

* FDA has requested SIP to draft HACCP plan templates to be provided to industry to update their plans for detection of oil. This is a portion of FDA's marketplace surveillance activity.

* Processing seafood safety samples collected off Western Louisiana by SEFSC contracted vessel Beau Rivage.

Document ID: 0.7.19.1879.2

* Manually generated & QA-ed seafood sample status summary from seafood safety sample spreadsheets and related documentation.

* Provided updated seafood safety sample metrics to Nancy Thompson per instructions.

* Worked on NSIL's DWH response cost estimates and expenditures with detailed narratives to describe the activities.

* Evaluating data received to date in regards to seafood safety sample receipt, log-in, and processing for purpose of determining data base structure and format in order to design an efficient sample log-in and tracking system.

* Complete seafood inspection report attached.

Marine Mammal and Sea Turtle Health and Stranding

PISCES reported a dead, 25ft long sperm whale today. The whale's location is 150 miles due south of Pascagoula, Mississippi. 430 total sea turtles verified to date within the "designated spill area" (increase of 19 from June 13 report)

* 371 stranded (increase of 8 from June 13)
    - o 338 of the stranded were found dead (increase of 8 from June 13)
    - o 33 of the stranded were found alive (no change from June 13)
    - o 4 recovered alive but died in rehab (no change from June 13)
    - o 4 turtles released alive (no change from June 13)
    - o 25 live turtles in rehabilitation (no change from June 13)
* 59 turtles collected during directed turtle sampling efforts (increase of 11 from June 13)
    - o 53 live turtles in rehabilitation (increase of11 from June 13)
    - o 3 turtles collected dead (no change from June 13)
    - o 3 turtles died in rehabilitation (no change from June 13)

* 219 carcasses to be necropsied, if decomposition stage warrants (increase of 8 from June 13)

* Of the initial 75 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

* To date, visible evidence of oil has been documented externally on 4 dead stranded sea turtle and 5 live stranded turtles(2 of which were caught in skimming operations).

* To date, visible evidence of oil has been documented externally on 56 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

* 43 dolphins have been verified to date within the "designated spill area" (increase of 2 from June 13).
    - o 41 were dead stranded dolphins (increase of 2 from June 13)
    - o 11 verified strandings but animals not collected due to stage of decomposition or unable to recover (increase of 2 from June 13)

* The complete health and stranding report, turtle stranding map, and dolphin stranding map are attached.

Document ID: 0.7.19.1879.2

1. Technical Working Group Updates

Shoreline: Four teams went out in the field to complete pre-assessment shoreline surveys at Pelican Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Point Chenier/Bay Island. Forensic oil sampling occurred in West-South Terrebonne Bay and West-Northwest Terrebonne.

CRMS Team observed light sheen observed on North shore of Lake Washington. No baseline data was obtained at CRMS 0174 due to the presence of oil. Sheen on vegetation was approximately 150 yards of marsh with approximately 100cm penetration.

Team 1- No report available

Team 2 evaluated the southern portion of Wilkerson Canal, eastern portion of St. Mary's Point, and the northeastern shore of Wilkerson Bay near Wilkerson Canal. Heavy oil observed along western shoreline of Wilkerson Canal heading south, beginning just south of stationary barge until the beginning of Wilkerson Bay. Light oil and sheen observed along northern island surrounding St. Mary's Point. Heavy oil observed along southern shoreline of island surrounding St. Mary's Point. Boom was present along most shorelines.

Team 3 assessed shoreline and marsh areas west of Marsh Island. All waypoints were collected starting near the westernmost limits of SCAT oil mapping data in the area, progressing in an eastward direction. Data obtained during the day's field effort was found to coincide with existing SCAT mapping data, with the exception of the area mapped as "moderate" coverage immediately west of the Freshwater Lock. No oil was observed in this area.

Team 4 – no report available

Sample Intake Teams – Samples processed at shoreline as of 6/14/10:

• Chain of Custody's processed: 260

• Number of Bottles: 2700

• Jack Fitz cruise experienced mechanical problems which cancelled the sample intake team last night (6/14) and we have rescheduled for 6/15 rendezvous with vessel in Port.

Chemistry: As of June 14th, approximately 4500 samples have been collected to support NRDA baseline and pre-assessment data collection. This total consists of approximately 70% water samples, 20% sediment samples, and 5% or less of tissue, oil (tarballs), oil on water product, and dispersant.

Water Column: NRDA sampling activities are ongoing aboard 2 vessels..

NRDA sampling activities are ongoing aboard two vessels:

• **Brooks McCall:** Conducting deep water sampling 2.5 km northwest of wellhead, moving southwest.

• **Jack Fitz:** Returning to port due to mechanical problems

• **Ocean Veritas**: Deep water sampling 5km W of wellhead. Altering plans to 2km SW of wellhead if no signals. Indicated weak plume 5km N of wellhead at 4 of 5 stations at 1100m.

Human Use: Conducted boat ramp counts at 3 ramps in Central FL, 2 in Southern FL, 3 in Western FL, 3 in LA, 1 in MS, and 1 in AL. Shore counts and intercepts in MS. Overflight along north Gulf coast was canceled.

SAV: Currently identifying long-term sampling dates and sites for injury assessment phase.

Marine Mammals:

• The team flew a NRDA survey today to collect aerial sightings of marine mammals and turtles in the primary oil spill zone. Six bottlenose dolphins were seen in light sheen and two unidentified dolphins were seen in light sheen.

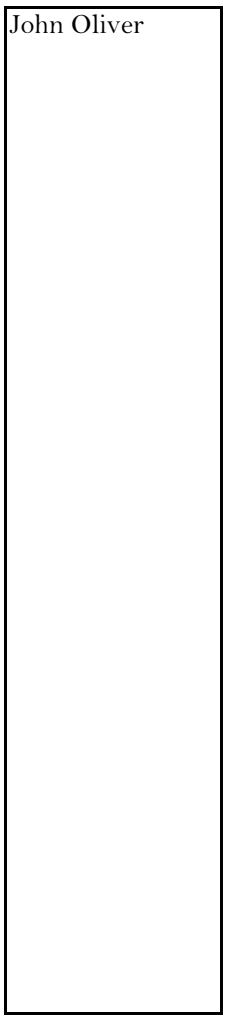
• Marine Mammal survey team aboard Gordon Gunter is underway on a sperm whale preassessment survey.

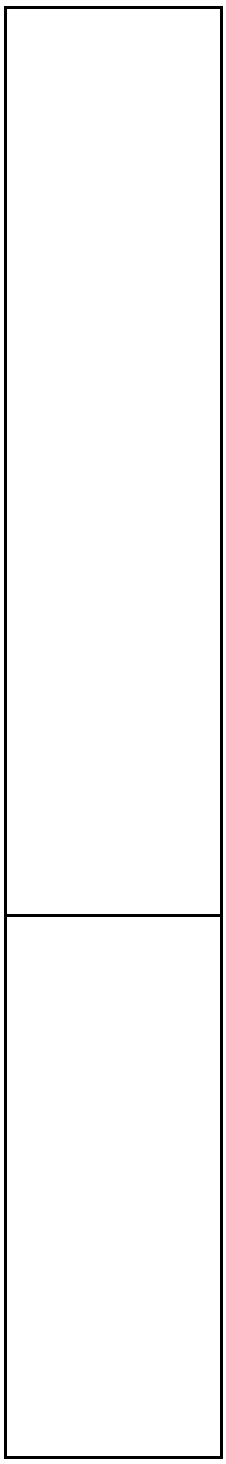
The following digital files are attached. Information is current as of Date Time Group in subject line. 1. NOAA Platform Powerpoint showing current mapped locations of assets. 2. OMAO Assets Excel Gantt Chart showing projects assigned to each asset. 3. Proposed OMAO Asset DWH Response Schedule Word document identifying impacts to NOAA projects should OMAO assets be tasked.
No updates
No updates
*Planning seafood safety media day at Pascagoula Lab, date TBD. *Answered several follow up press calls on ERMA / GeoPlatform.gov. *Holding second ERMA /GeoPlatform.gov webinar for select media, Wed. 1pm EDT. *Preparing roll out (date TBD) of NOAA's long-term modeling of oil movement - via fact sheet (in clearance), press release and supporting Q&A (in development) and media availability. (Chris Vaccaro and David Holst as lead contact points) * Working on data release policy with Science Team and DWH Staff * JIC put out update release on this week's TJ, Gunter, and Pisces missions.

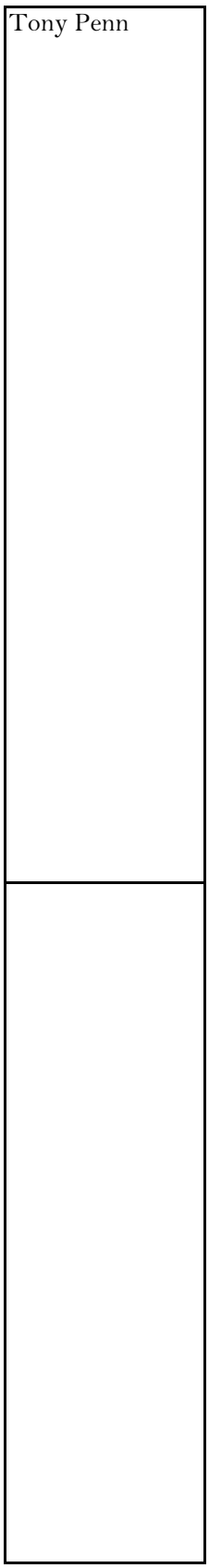
External Affairs received final comments on the draft fact sheet on volunteer programs and will pursue JIC approval for the document. Will be posted on the External Affairs website and offered to the interagency group for their sites. Reached out to LaDon Swann, Bill Walker and Bill Hogarth about concerns of the academic community in the Gulf region. Will use this and other findings to draft a brief strategy for continued outreach to that sector. Met with Constituent Affairs Network to summarize outreach efforts to Gulf and to coordinate line office participation. Reached out to Bill Loiry who is the organizer for the June 17th Gulf Oil Spill Disaster Response Summit being held in Mobile, AL. Contacted the Houma JIC to get more information on the BP Community Expos that have been held in Louisiana over the past week and will continue this week. The Expos are being planned out of the Houma JIC by contractors hired by BP. Federal and state agency participants are also being coordinated through staff stationed at the Houma JIC. Spoke with Paul Sadowski, BP contractor at Houma JIC. Spoke with Rebecca Hoff, NOS OR&R In the case for NOAA - this is being done through the NOAA NOS OR&R Science Support Coordinator (SSC - Jordan Stout last week), Assistant SSC (Ed Levine last week) and the Biologic Support Representative (Rebecca Hoff last week). The SSC is an established position that coordinates to support the USCG - long before the BP oil spill. In this case though the SSC and Biologic Support are tied to the Incident Command.
Additional contact made with Margaret 'Jody' Cottrill at the Unified Area Command and she passed along additional contact information regarding the Expos and the plans for the Unified Area Command to put together a Speakers Bureau. **Requests for speakers at following events need to be confirme**
n LSU Food and Water Safety Executive Summit Meeting – Baton Rouge, LA - June 25
n Jackson County Republican Women's Group - Pascagoula, MS - July 12 at the Grand Magnolia Suites and Ballroom Kiwanis Club - Loc: TBD - July 14, 2010 Reached out to FEMA Intergovernmental Affairs, Gwen Camp requesting to speak with her about FEMA's plans or ongoing outreach along the Gulf Coast with regards to hurricane season preparedness. **Complaint e-mails** External Affairs received 10 new emails over the weekend and Monday. We have responded to 7 of them. Topics included oil leak fix suggestions, trajectory map mistakes and general complaints.

1. Responded to State Department/Cuba Desk questions about the loop current and fishery closures. The Desk is expecting a large delegation later this week to discuss migration issues and want to be prepared for oil spill questions. They have further questions about sub-surface plumes and monitoring them. Responses being worked with DWH staff. 2. A representative from the U.K. Center for Environmental Fisheries and Aquaculture Science proposed an MOU with NOAA on marine science, ocean and human health. To respond to the oil spill they are offering to host a scientific meeting to promote science exchange, goodwill, and promotion of collaboration. The information was passed to Dr. Robinson and Dr. Murawski. 3. Awaiting decision by Dr. Lubchenco regarding possible meeting with Dr. Porfirio Alvarez or possible delegation to Dr. Robinson or someone else. Dr. Alvarez' contact information (cell phone number and email address) passed to PCO for quick contact after decision. 4. Received response from Brendan Bray on arrangements for possible hosting of a visit from a Bahamian scientist to interact with modelers in Seattle. A likely time frame of mid-late July or later was suggested in order to assure time to process the required foreign visitor forms. OR&R does not currently have the resources to pay for travel. 5. The weather advisory regarding a low pressure system which may develop into a tropical cyclone was passed to State along with the National Hurricane Center URL. The system is 1250 miles east of the Windward Islands. **Key Bullets** • Assisting Cuba Desk at State Department prepare for a visit from a large delegation where the oil spill is expected to be raised. • Continuing a review of arrangements and accommodations needed to support a visit by a Bahamian scientist to Seattle to interact with modelers. OR&R not able to pay travel. • U.K. offer of collaboration passed to Dr. Robinson & Dr. Murawski. • Awaiting decision regarding meeting with Dr. Alvarez (Mexico)
No updates
No updates

LEAD
Bill Conner
Steve Murawski


John Oliver




Tony Penn

Phil Kenul
Buck Sutter
John Gray
Justin Kenney

Andy Winer

Joe Klimavicz

Jim Turner
Lois Schiffer
Sally Yozell

Update through June 14, 2010 (as of 1800)

Marine Mammal and Sea Turtle Health and Response

Noteworthy Developments During this Reporting Period:

- Increase of 8 turtle strandings (1 dead in FL, 1 dead in MS, and 1 dead in LA; 1 dead in FL, 1 dead in MS, and 3 dead in LA reported from June 13 after 1800)
- Increase of 11 live oiled turtles captured during directed on-water search efforts
- Increase of 2 dolphin strandings (2 dead in MS photodocumented on May 25 and 26, verified on June 14)
- The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.

Sea Turtles:

430 total sea turtles verified to date within the "designated spill area" (increase of 19 from June 13 report)

- 371 stranded* (increase of 8 from June 13)
  - 338 of the stranded were found dead (increase of 8 from June 13)
  - 33 of the stranded were found alive (no change from June 13)
    - 4 recovered alive but died in rehab (no change from June 13)
    - 4 turtles released alive (no change from June 13)
    - 25 live turtles in rehabilitation (no change from June 13)
- 59 turtles collected during directed turtle sampling efforts (increase of 11 from June 13)
  - 53 live turtles in rehabilitation (increase of 11 from June 13)
  - 3 turtles collected dead (no change from June 13)
  - 3 turtles died in rehabilitation (no change from June 13)

* For this event, a true turtle stranding is defined as a turtle that washes ashore dead or debilitated or is found floating dead or debilitated in the course of non-directed turtle surveys. Turtles observed and/or captured during directed sampling efforts are not categorized as strandings.

Turtle Necropsy Status (of the 338 dead stranded, 3 dead directed capture, and 7 that died in rehab):

- 7 assessed and unable to perform necropsies (i.e. advance decomposition) (no change from June 13)
- 17 partial necropsies (e.g. due to scavenging or autolysis) (no change from June 13)
- 59 full necropsies performed (no change from June 13)
- 46 carcasses not collected due to decomposition state or unable to recover but marked and/or buried (no change from June 13)
- 219 carcasses to be necropsied, if decomposition stage warrants (increase of 8 from June 13)
- Of the initial 75 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

Information on Signs of Sea Turtle Oiling:

Document ID: 0.7.19.1879.3

- To date, visible evidence of oil has been documented externally on 4 dead stranded sea turtle and 5 live stranded turtles (2 of which were caught in skimming operations).
- To date, visible evidence of oil has been documented externally on 56 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

Historical Sea Turtle Strandings:

- The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-14 is 119.
- This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. The breakdown by state for the range of animals historically stranding in the month of June (2005-2009) is as follows:
    - Louisiana: 0-3 stranded sea turtles
    - Mississippi: 0-1 stranded sea turtles
    - Alabama: 0-4 stranded sea turtles
    - Florida panhandle (Escambia – Wakulla Co.): 5-17 stranded sea turtles
- There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.

Marine Mammals:

43 dolphins have been verified to date within the "designated spill area" (increase of 2 from June 13).

- 41 were dead stranded* dolphins (increase of 2 from June 13)
- 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding (no change from June 13)

* Under the Marine Mammal Protection Act Section 409.3, a marine mammal stranding is defined as an event in the wild where:

- A marine mammal is dead and is on the beach or shore of the United States or in waters under the jurisdiction of the United States (including any navigable waters); OR
- A marine mammal is alive and is on a beach or shore of the United States and unable to return to the water, on a beach or shore of the United States and, although able to return to the water, is an apparent need of medical attention or in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance.

Dolphin Necropsy Status (of the 41 dead stranded and 2 live stranded that died or were euthanized):

- 15 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 13)
- 8 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 13)
- 6 full necropsies performed (no change from June 13)
- 11 verified strandings but animals not collected due to stage of decomposition or unable to recover (increase of 2 from June 13)

Document ID: 0.7.19.1879.3

- 3 carcasses to be necropsied, if decomposition stage warrants (no change from June 13)
- Necropsy results are pending for all animals necropsied to date.

Information on Signs of Dolphin Oiling:

- Two of the verified dolphins have evidence of external oil on the tongue and/or body and therefore were classified as oiled. However, we are unable at this time to determine whether the animal was externally oiled pre- or post-mortem. All other necropsy findings are pending.

Historical Dolphin Strandings

- The total number of dolphin strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 14 is 12.
- This is higher than the number of marine mammal strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. In part, this may be a reflection of increased detection and reporting and the lingering effects of an earlier observed spike in strandings for the winter of 2010.
- The breakdown by state for the range of animals historically stranding in the month of June (2003-2007) is as follows:
    - Louisiana: 0-5 stranded dolphins
    - Mississippi: 0-1 stranded dolphins
    - Alabama : 0-1 stranded dolphins
    - Florida panhandle: 0-4 stranded dolphins

<u>Summary of Action Plan Items:</u>

- The directed turtle survey managed by the Marine Mammal/Sea Turtle Unit was on the water today (see results above) and will be on the water again Tuesday June 15.

Document ID: 0.7.19.1879.3

Seafood Safety Daily Report
Reported from Seafood inspection Program, National Seafood Inspection Laboratory and Northwest Fishery Science Center
Tuesday, May 15, 2010

Seafood Inspection Program:

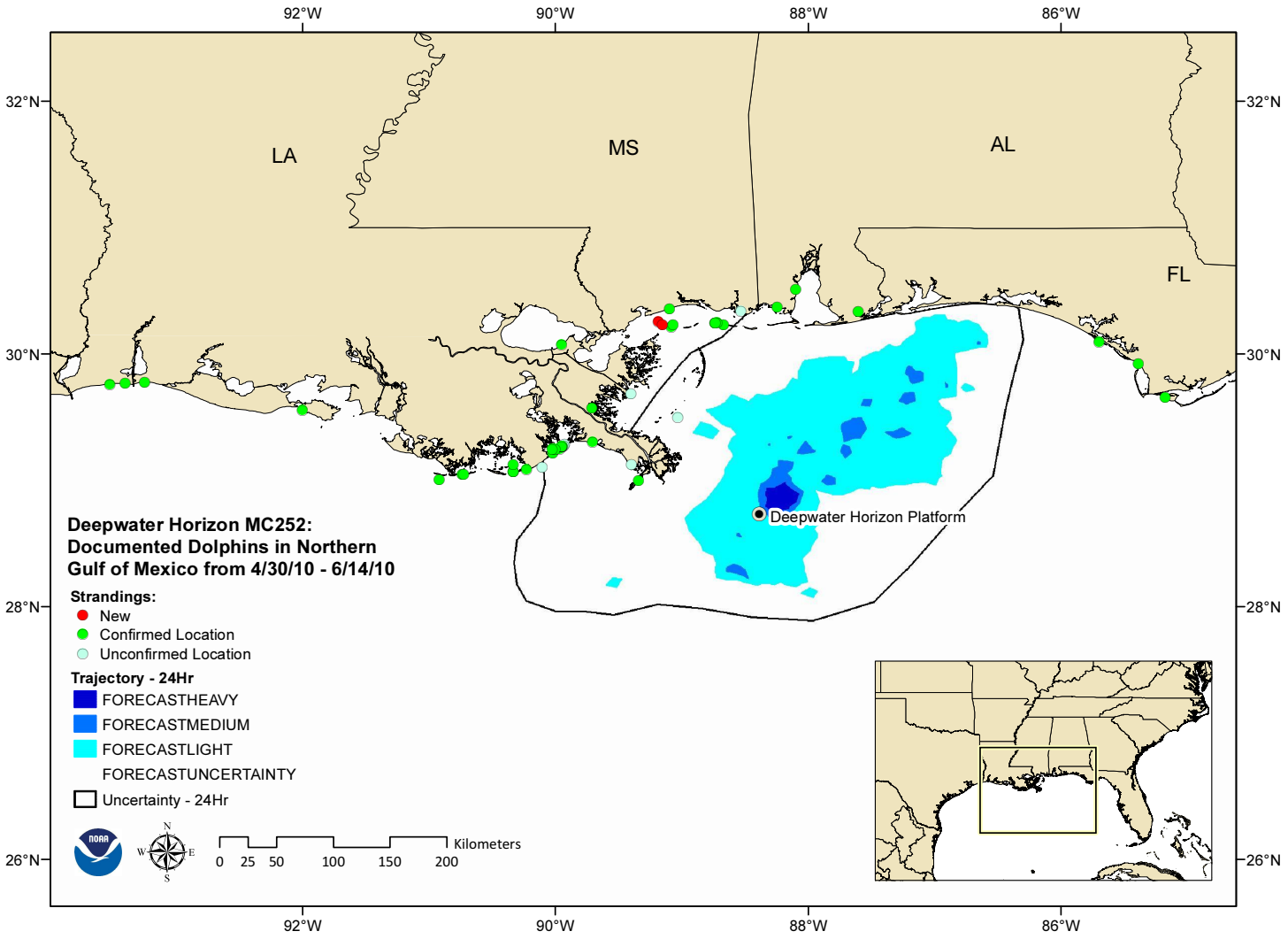
- Participated in an interagency conference call regarding consumption rates. Agreement appears to have been reached and the protocol tables are being modified.
- Steven Wilson is drafting a dockside monitoring plan for review by the NMFS management.
- FDA has requested SIP to draft HACCP plan templates to be provided to industry to update their plans for detection of oil. This is a portion of FDA's marketplace surveillance activity.

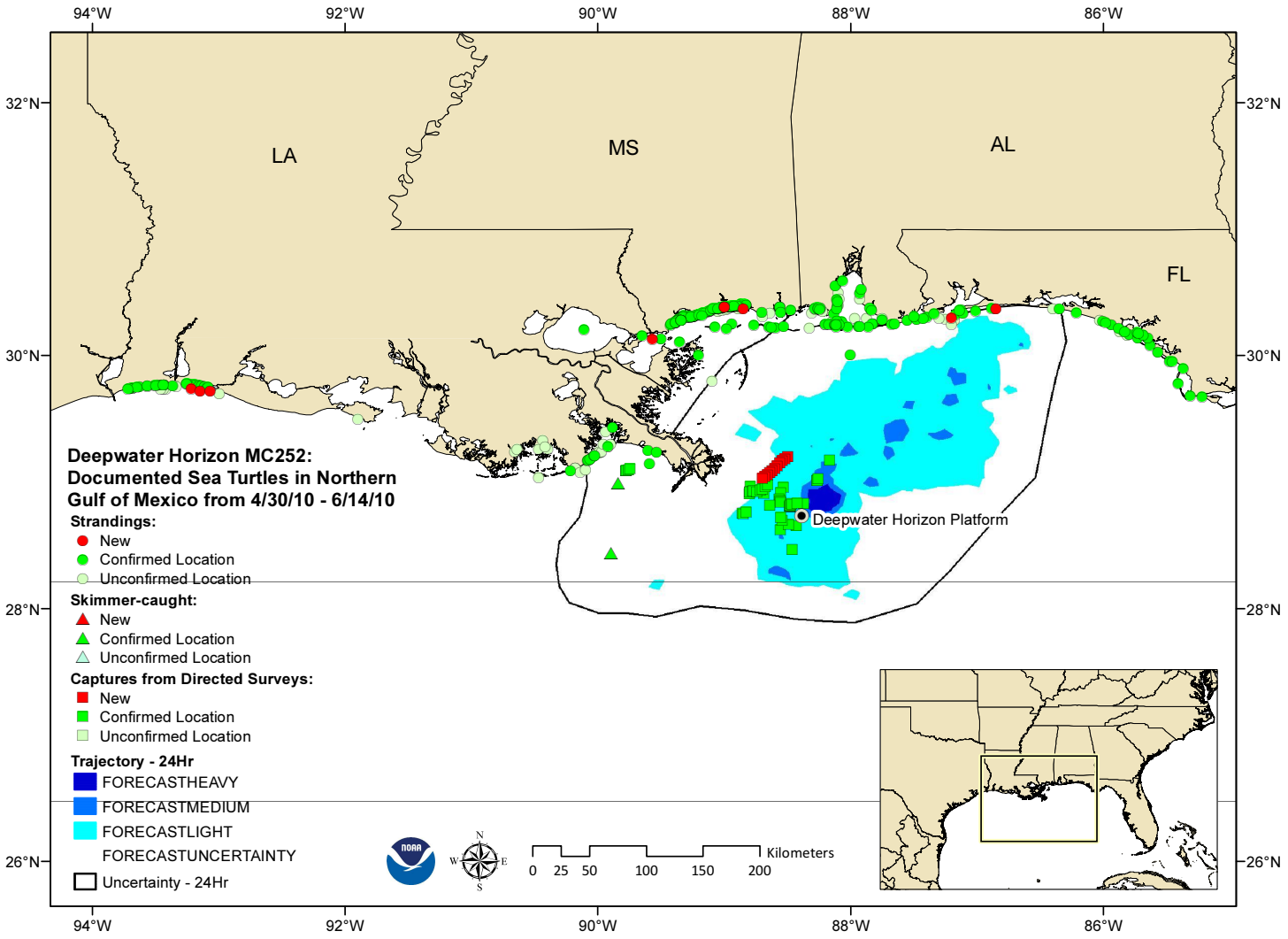
Northwest Fishery Science Center (NWFSC):

- Three NWFSC staff are in Pascagoula assisting NSIL staff in processing fish and shellfish to be shipped for chemical analyses.
- NWFSC is continuing chemical analysis of finfish and shellfish tissues.

National Seafood Inspection Laboratory

- Processing seafood safety samples collected off Western Louisiana by SEFSC contracted vessel Beau Rivage.
- Manually generated & QA-ed seafood sample status summary from seafood safety sample spreadsheets and related documentation.
- Provided updated seafood safety sample metrics to Nancy Thompson per instructions.
- Provided tour of NSIL facilities and DWH operations to NMFS AA Eric Schwaab.
- Worked on NSIL's DWH response cost estimates and expenditures with detailed narratives to describe the activities.
- Evaluating data received to date in regards to seafood safety sample receipt, log-in, and processing for purpose of determining data base structure and format in order to design an efficient sample log-in and tracking system.
- Programming database front end for seafood safety sample data management. The database will replace the current data management strategy which uses multiple spreadsheets which is cumbersome and not as efficient as a database.
- Hosting SIP Sensory Analysts and NWFSC staff.


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/14/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
N
W
E
S
0 25 50 100 150 200
Kilometers


94°W
92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/14/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
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Kilometers

Proposed NOAA Asset DWH Response Schedule

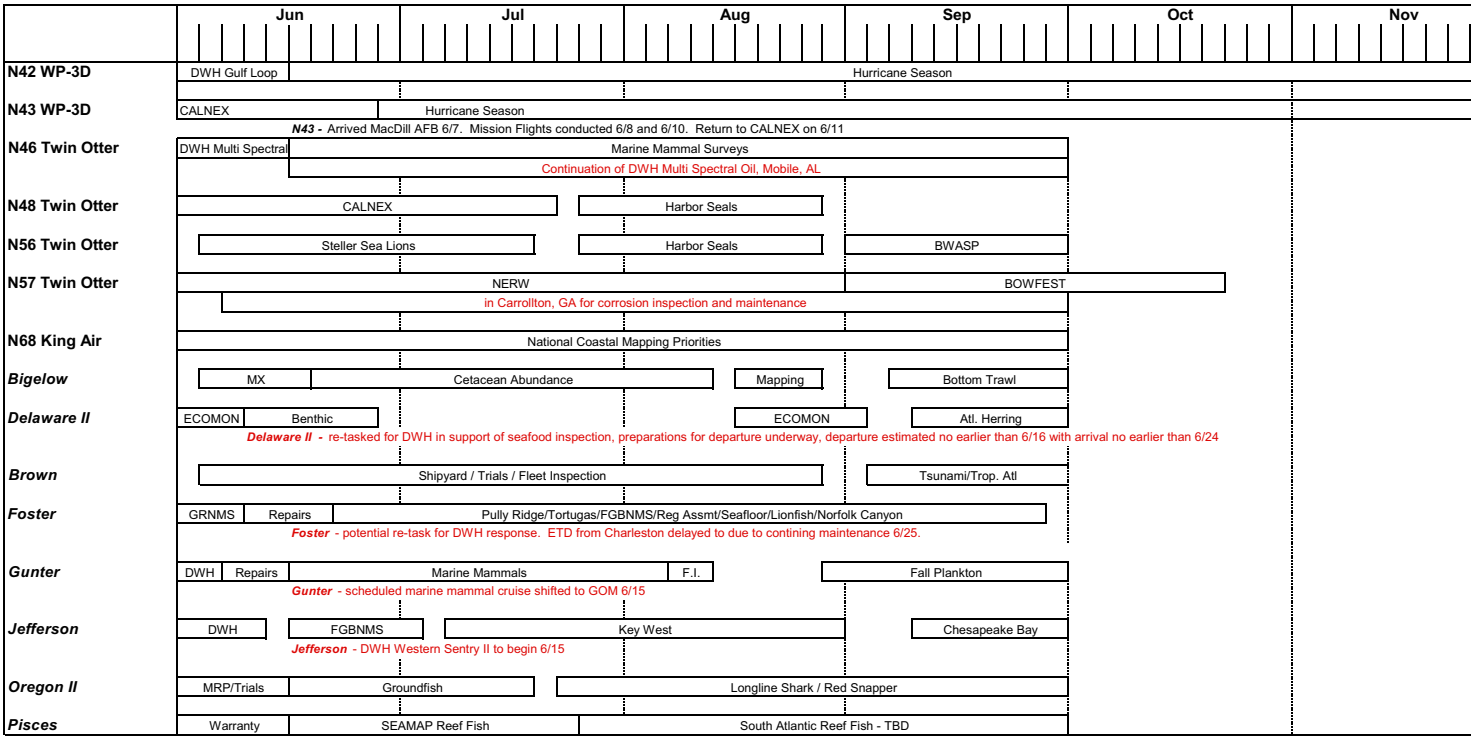
SHIPS				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
Gunter	June 5	June 26	Repairs/ABS inspection scheduled for 6/5-6/14 GU-10-02 Leg 1 - Marine Mammals 06/15 – 06/26	Departed Pascagoula, MS, for DWH Marine Mammal project 6/15
Foster	June 5	June 19	None: NF-10-05, Grays Reef Comparison Cancelled.	Inport Charleston, SC for z-drive repairs and potential DWH response. ETD 6/25.
Thomas Jefferson	June 15	tbd	TJ-10-03 FGBNMS	Departed Galveston, TX, for DWH Western Sentry II 6/15
Oregon II	June 21	July 5	Rd-10-01 Summer groundfish Leg 2 loses 9 DAS (much of the area typically surveyed during this project is likely going to be off limits due to the oil.)	Could shift to start one day earlier to maintain continuity of DWH mission support by ending Leg 1 of groundfish a day or two early. Ship would have to resupply with water once.
Delaware II	tbd	tbd	DE-10-05 Benthic Habitat	DE plans to depart Woods Hole 16 June for 8 day transit to GOM pending final project instructions for seafood sampling mission
Foster	July 5	July 18	NF-10-07 Tortugas Eco Reserve loses all 7 DAS	Allows 2 weeks for z-drive repairs alongside in Pascagoula
Gunter	July 18	August 4	GU-10-02 Marine Mammals, Leg 3 – lose 14 DAS. Currently this project is scheduled for Atlantic Ocean, but there are discussions of moving this effort to the Gulf instead. If project remains in Atlantic, GU isn't an option	GU would have to resupply fresh water one time during this mission period
Pisces	August 5	September 3	PC-10-04 CoOp Reef Fish Survey loses 23 DAS	This 30 day mission would have to be broken into 2 or 3 legs w/ T&Gs for water
Oregon II	September 3	September 28	Rd-10-02, Shark/Snapper Longline loses all of Leg 4 and most of Leg 3. Estimate losss of ~20 DAS. However,	This 26 day mission would have to break into 2 or 3 legs for water and reprovisioning

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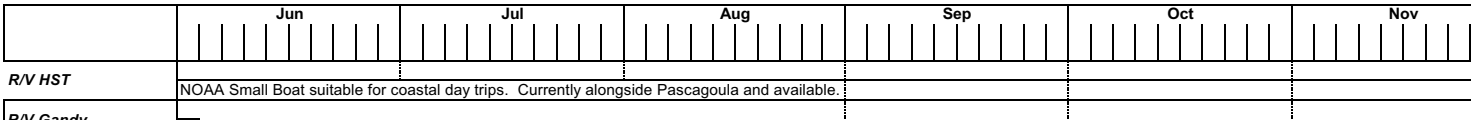
			much of the project's survey area is impacted by oil	

Aircraft				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
N42RF WP-3D		June 15	Hurricane Season	Funding ends on June 15. Gulf Loop Current flights could be rescheduled around any tasking for Hurricanes. Hurricane taskings would delay Gulf Loop Current flights by several days
N43RF WP-3D	TBD	TBD	CALNEX (OAR California air quality study)- Potential loss of 1 to 3 days	Reassignment to DWH for air quality study per OAR request. Arrived MacDill 6/7. Mission Flights conducted 6/8 and 6/10. Returned to CALNEX 6/11.
N46RF Twin Otter	April	September 30	Alaska Marine Mammal Surveys	Extending Multi Spectral Oil Analysis flights beyond June 15 will impact Alaska Marine Mammal surveys. Additionally, engine overhaul date will be accelerated due to increased utilization and installation of extended range fuel tank will be delayed.
N57RF Twin Otter	June 7	September 30	Northeast Right Whale / BOWFEST	DWH Marine Mammal flights tasking resumed June 7. Anticipated schedule is approximately 5 flights every 14 days. Tasking could be flown on Twin Otter N46RF but belly port will be unavailable for use. Additional crew would be required for N46F due to crew duty day limitations.
N68RF King Air	April	September 30	National Coastal Mapping Priorities	Risk of not meeting GPRA goals for shoreline mapping.

OMAO Assets (as of 6/15/10)



NOAA Line Office Assets



3/29/2011

Document ID: 0.7.19.1879.11

R/V Gandy	NOAA Small Boat conducting reef fish surveys out of Panama City, FL. Inport Pascagoula with mechanical problems until 6/14			
R/V Caretta	NOAA Small Boat alongside Pascagoula. DHW begin 6/21.			
R/V Harold B	Scheduled to conduct trap/video surveys out of Panama City the reamainder of the month.			

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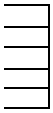
Other Assets

	Jun	Jul	Aug	Sep	Oct	Nov
Beau Rivage	no update					
Brooks McCall	In Port Fourchon, LA					
Bunny Bordelon	In Houma. LA.					
Capt Hatteras	Deepwater CTD sampling 7km from wellhead SW quadrant					
Endeavor	In port St. Petersburg,FL					
Jack Fitz	ROV survey, deep and shallow water CTD sampling 1 km N of wellhead.					
Ocean Veritas	Deepwater sampling 5 km NE of wellhead					
Pelican	no update					
Rachel Bordelon	In port Houma, LA					
Ryan Chouest	Subsurface (150m) sampling for hydrocarbons towards E to find plume extent					
Walton Smith	Inport Miami, FL					
IOOS Gliders	DWH*					
	Monitoring for oil in Florida coastal waters from Tampa to FL Keys. *No end date specified for gliders.					
NAVO Gliders	Monitoring and sampling oceanographic conditions					

3/29/2011

Document ID: 0.7.19.1879.11

3/29/2011

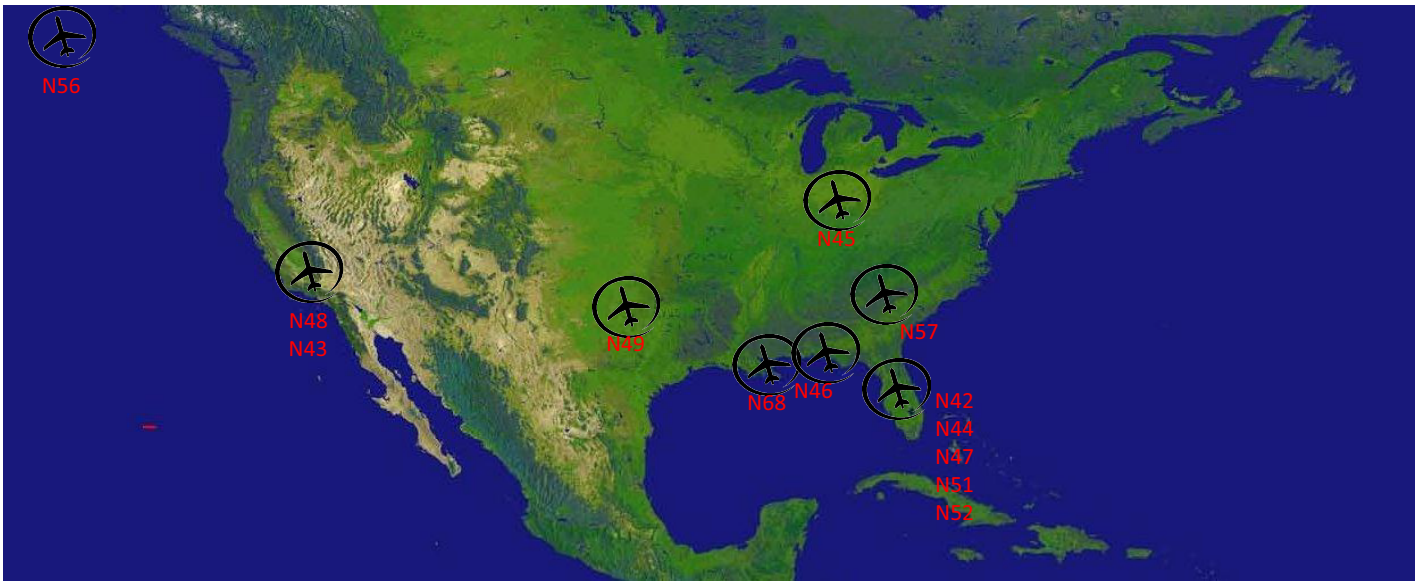


3/29/2011

3/29/2011

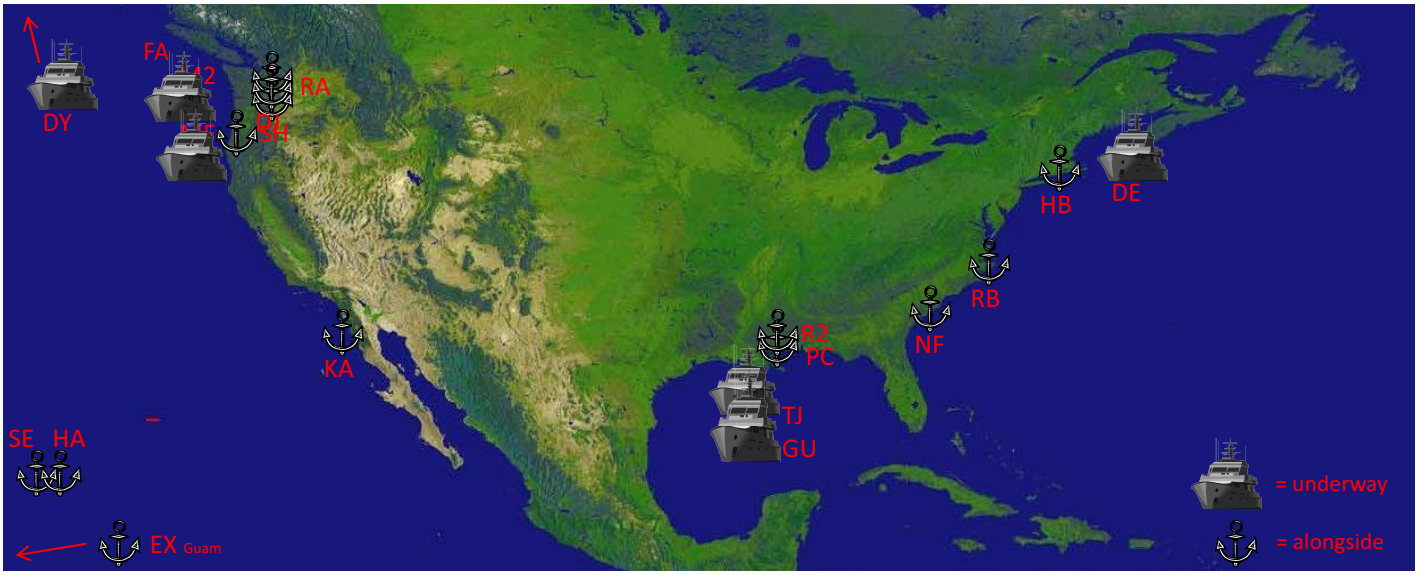
Document ID: 0.7.19.1879.11

NOAA Aircraft Positions
As of 15 JUN 2010



ID	Type	Status Today
N42	P-3	DWH Loop Current, No Flight Today, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Maintenance, Indianapolis, IN
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Ontario, CA
N49	G-IV	Tail Doppler Radar install/testing, Ardmore, OK
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Kodiak, AK.
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

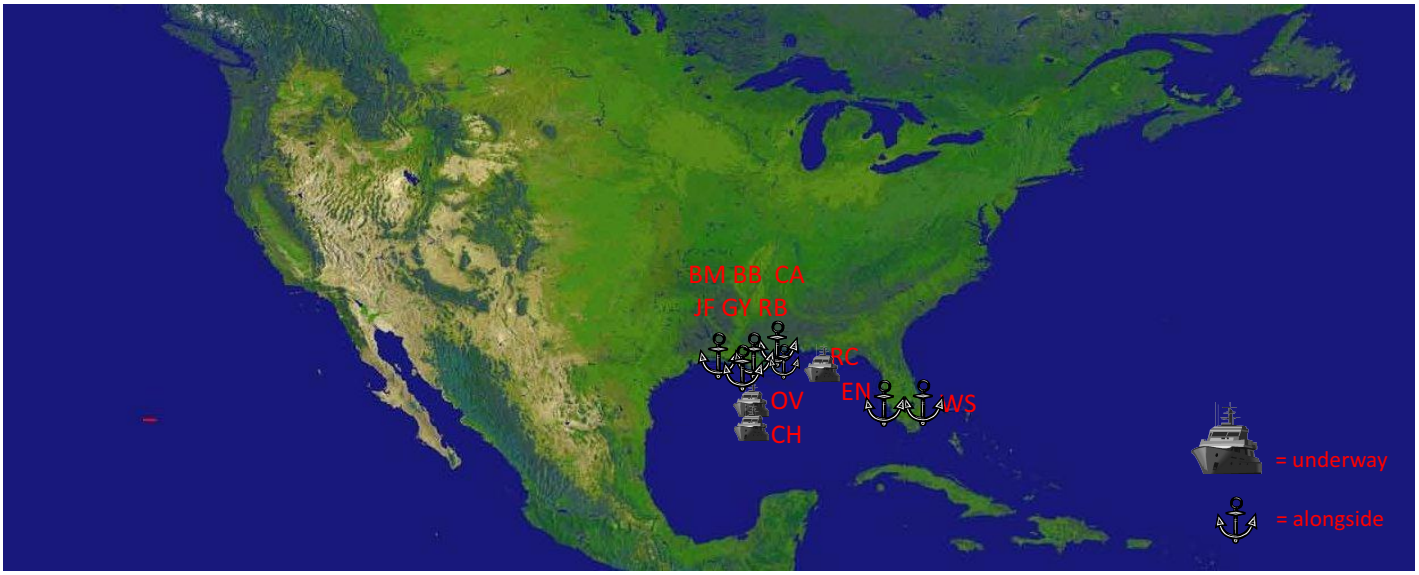
NOAA Ship Positions
As of 15 JUN 2010



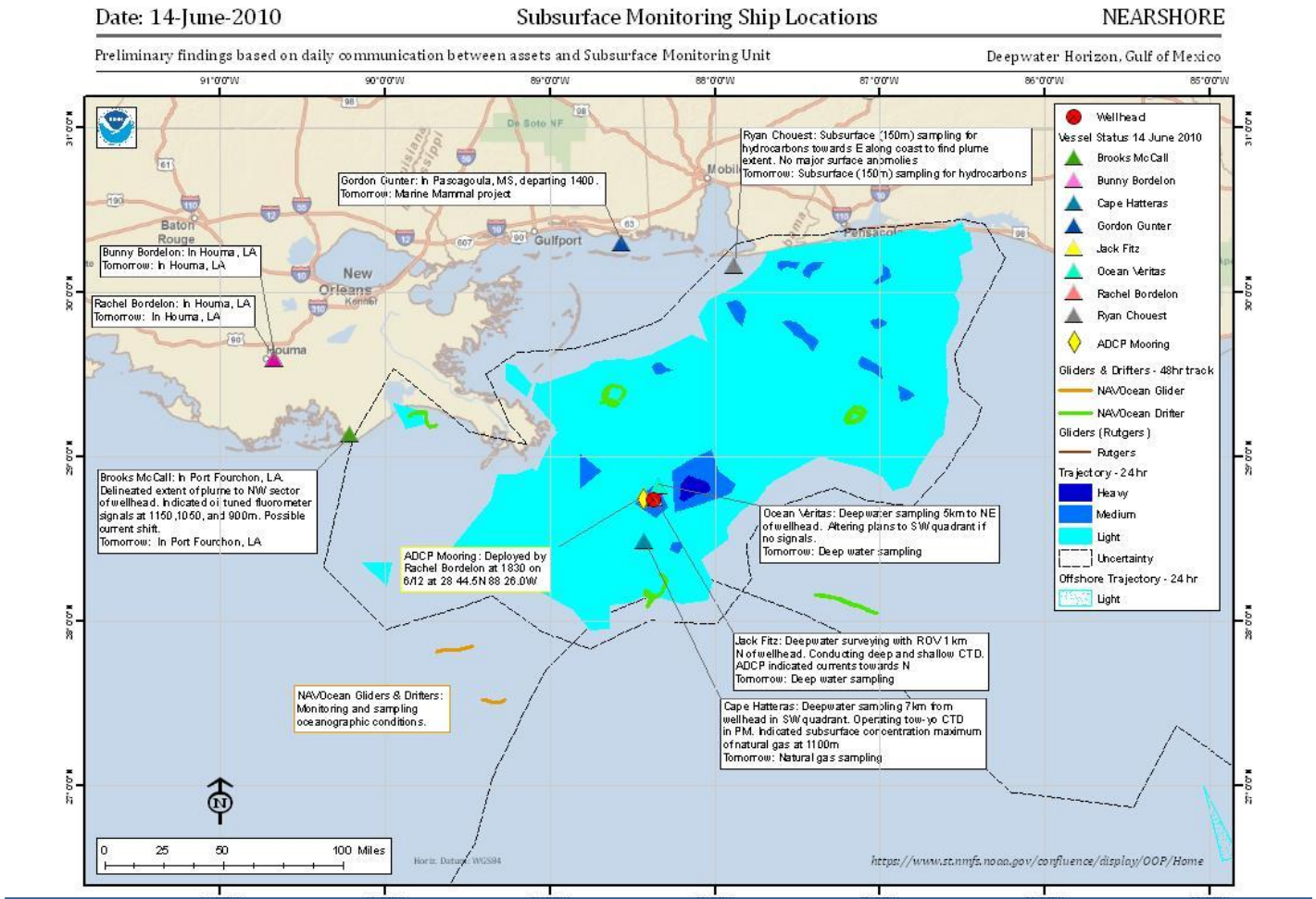
ID	Status Today
FA	Scheduled operations suspended by weather. Arrival 6/18 Port Angeles, WA
SH	Alongside Seattle, WA. Departure 06/25 for scheduled project
MF	Underway on scheduled project. Arrival 06/21 Seattle, WA.
DY	Underway on scheduled project. Arrival 6/24 Dutch Harbor, AK
HI	Alongside Pearl Harbor, HI. Departure 6/17 for scheduled project
M2	Underway on scheduled project. Arrival San Francisco 07/04
SE	Alongside Pearl Harbor, HI. Departure 7/6 for scheduled project
KA	Alongside San Diego, CA. Departure 7/8 for scheduled project
RA	Alongside Cascade, OR for shipyard repair period
DJ	Alongside Seattle, WA. Decommissioning on week of 08/02
EX	Underway on scheduled project. Arrival TBD

ID	Status Today
DE	ETD for DWH Seafood Safety surveys 06/16
TJ	ETD Galveston, TX for DWH acoustics and water sampling 06/15
HB	Alongside Newport, RI. Departure 07/07 for sea trials
NF	Alongside Charleston, SC. Departure 6/25 for scheduled project
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Alongside Pascagoula, MS. Departure 6/15 for mammal surveys near DWH
PC	Alongside Pascagoula, MS. Departure for DWH surveys TBD
R2	Alongside Pascagoula, MS. Departure 6/16 for sea trials and scheduled project

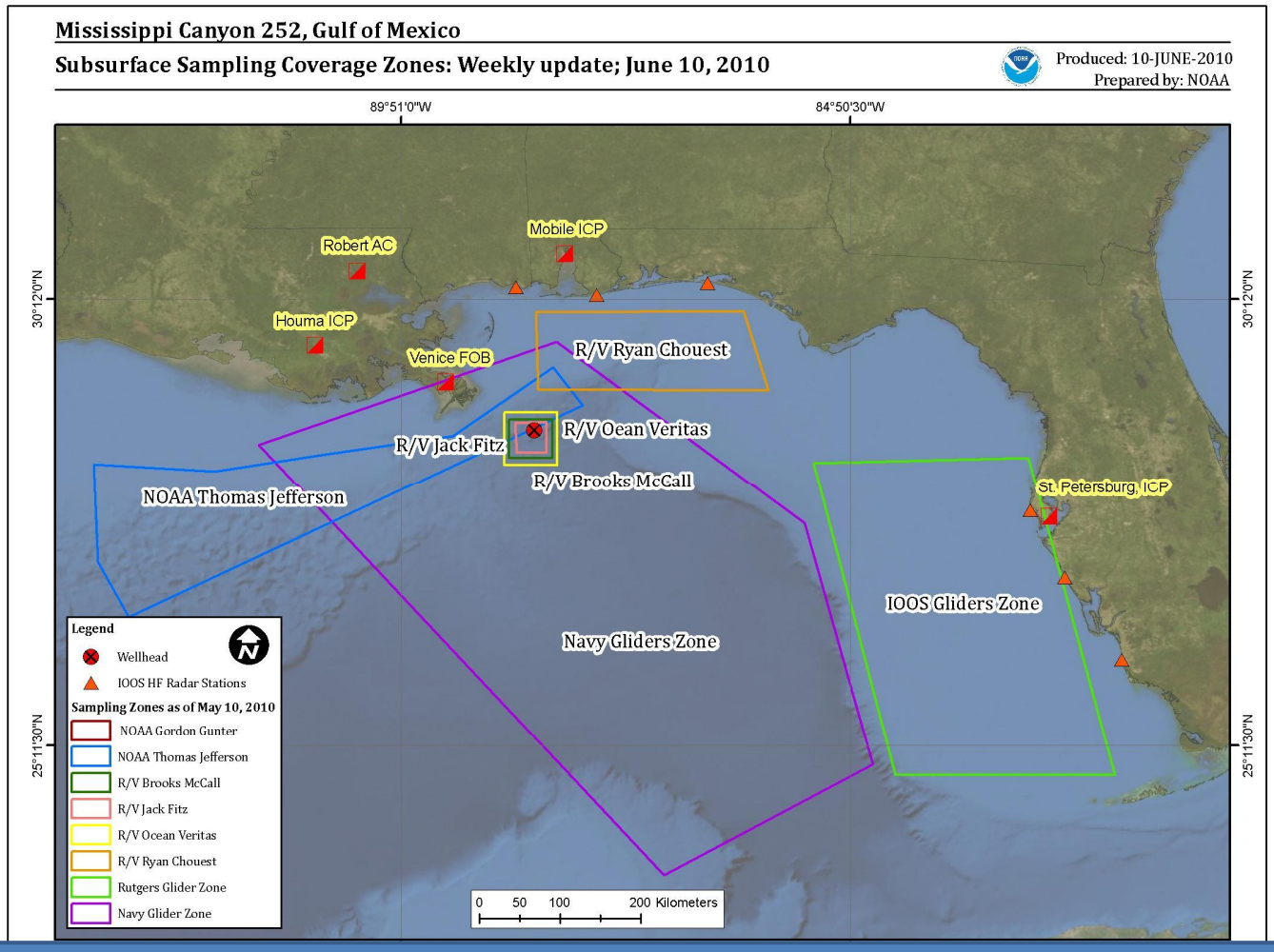
Chartered Vessels and NOAA Small Boats
As of 15 JUN 2010



ID	Type	Status Today
BM	R/V Brooks McCall	In Port Fourchon, LA
BB	M/V Bunny Bordelon	In Houma, LA
CH	R/V Cape Hatteras	Deepwater sampling 1km W of wellhead, surface surveying for natural gas, tow-yo CTD sampling 5km SW of wellhead
CA	R/V Caretta	NOAA Small Boat alongside Pascagoula. DWH begin 21 June
EN	R/V Endeavor	In St. Petersburg,FL
GY	R/V Gandy	In Pascagoula for mechanical problems. Return to operations estimated 14 June
JF	R/V Jack Fitz	In Leeville, LA
OV	R/V Ocean Veritas	Deepwater sampling 5 km W of wellhead
RB	M/V Rachel Bordelon	In port Houma, LA
RC	R/V Ryan Chouest	Subsurface (150m) sampling for hydrocarbons towards E to find plume extent
WS	R/V Walton Smith	Inport Miami, FL



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Assets

Subsurface Monitoring Vessel Assignments

Vessel Assignments for June 15, 2010 to June 17, 2010

Vessel - MMSI	*Type*	*Compliment*	*June 15, 2010*	*June 16, 2010*	*June 17, 2010*
Brooks McCall 338257000	162 ft M/V	32	In Port Fourchon, LA	In Port Fourchon, LA, departing 1800 for deepwater sampling	Deep water sampling
Bunny Bordelon 366816890	150 ft OSV	16	In Houma	In Houma	In Houma
Cape Hatteras 366929330	135 ft R/V	24	Deep water sampling 1km W of wellhead. Surface surveying for natural gas. Tow-yo CTD sampling 5km SW of wellhead in PM	Deep water and natural gas sampling	Deep water and natural gas sampling
Endeavor 367017340	185 ft R/V		In St. Petersburg, FL	In St. Petersburg, FL	Departing St. Petersburg, FL for deep water ROV and sampling
Gordon Gunter 303913000	224 ft R/V	33	In Pascagoula, MS, departing 1230	Marine Mammal project	Marine Mammal project
Jack Fitz 366765580	165 ft OSV	26	In Leeville, LA	TBD	TBD
NAVOcean Sea Gliders	2 AUV's		Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions
Ocean Veritas 367116090	194 ft M/V	41	Deep water sampling 5km W of wellhead. Altering plans to 2km SW of wellhead if no signals. Moving back to NE late	Deep water sampling	Deep water sampling
Rachel Bordelon 367359570	150 ft OSV	20	In Houma, LA	In Houma, LA	In Houma, LA
Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	Subsurface sampling for hydrocarbons towards E along coast to find plume extent	Arriving Theodore, LA for crew change	In Theodore, LA
Thomas Jefferson 369958000	208 ft R/V	33	In Galveston, TX, departing 1300	Surveying in FGBNMS	Coastal surface and subsurface sampling

Document ID: 0.7.19.1879.12

Received(Date): Wed, 16 Jun 2010 05:56:15 -0400
From: Christopher.S.Moore@noaa.gov
Subject: Morning Reports
To: Deepwater.HorizonDist@noaa.gov
Deepwater_Horizon_Report_59.pdf
forecast_20100618_1200CDT_20100615_2100CDT_rs.pdf
landfall6_15_complete.pdf
LoopCurrentMap-6-15.pdf
LoopCurrentStatus-6-15.pdf
os_forecast_20100618_1200CDT_20100615_1900CDT_rs.pdf

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NOAA Emergency Response Division (ERD)
Report # 59: June 15, 2010 2000 PDT
MC 252 DEEPWATER HORIZON Incident, Gulf of Mexico, Major Spill Incident

Situation Update, Day 57:

Overview:
After further calculations the Flow Rate Technical group released new estimates of flow rate from the MC 252 riser after it was cut to place on the Lower Marine Riser Package (LMRP) or 'top hat'. The plume team estimates that post riser cut, but before the top hat was in place, the amount of oil exiting the riser was between 35,000 and 60,000 barrels/day.

Collection of oil from containment cap of the leaking MC 252 well was interrupted this morning when lightning struck the recovery ship Discovery Enterprise. The lightening strike started a fire in a vent pipe leading from a storage tank. An automatic fire suppression system contained the fire in about 10 minutes with no injuries or significant damage to the vessel or containment system and collection resumed within 5 hours of the strike. The system had been recovering about 15,000 bbls per day. No recovery volume was reported today.

NOAA continues to prepare daily trajectories for the nearshore and offshore oil. In the nearshore, winds are forecast to be relatively weak (5-8 kts) and predominantly SW/W through Thursday, then become NW at 6-9 kts on Friday. Trajectories indicate continued movement of the slick to the NE over the next few days. Eastward alongshore currents will continue to move the oil east along the Florida coast. Coastal regions between Dauphin Island, AL and Panama City, FL are threatened by shoreline contacts within this forecast period. A morning overflight reported scattered sheens and tarballs south of the Chandeleur Islands; this region is also threatened by shoreline contacts within this forecast period.

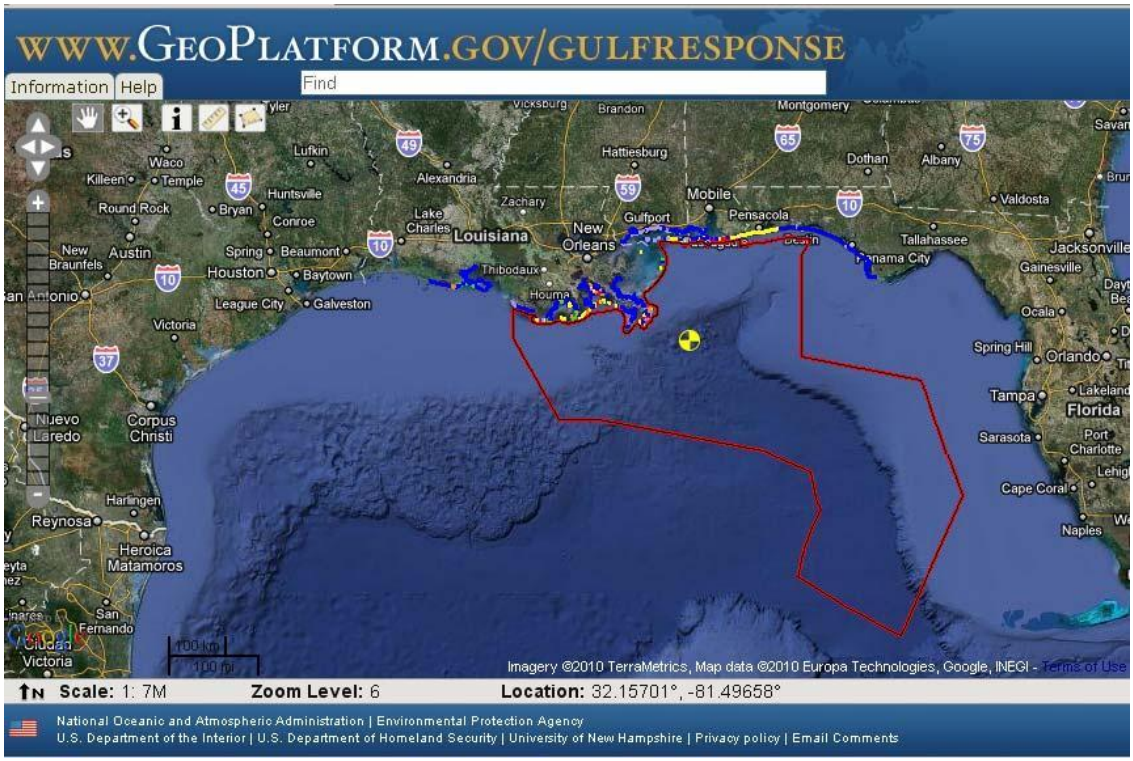
In the offshore region, recent satellite imagery analysis no longer shows the persistent patches of sheen to the S-SE of the main slick. However, scattered sheens and tar balls previously observed in these regions may be getting entrained into the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that most of these sheens will continue to move clockwise in Eddy Franklin. Some oil may be getting entrained into a counterclockwise eddy to the NE of Eddy Franklin. The connection between the spill source and Eddy Franklin has been cut off due to a change in the currents.

No changes to fishery closures were announced today, but injuries to wildlife and critical habitat are growing as oil collects in the Gulf and impacts shorelines. ORR continues to work with USFWS and other trust agencies to reduce impacts of oil and operations on trust resources. Today a dead sperm whale was reported in the Gulf. OR&R prepared a hind cast analysis to determine the whale's drift.

The potential for the low pressure system in the Atlantic to become a tropical cyclone was downgraded today. The National Hurricane Center had indicated that this system has a 40%

chance of this system becoming a tropical cyclone. The system, now 900 miles east of the Lesser Antilles, is now thought to have a 10% chance of developing in the next 48 hours.

Yesterday, the day the public spill and response information portal geoplatform.gov was released, the site received 3.4 million hits. The portal features over 400 data layers including trajectory forecasts, fishery closed areas, wildlife and resources at risk, and shoreline oiling. ORR will brief congressional, media, and NGO staff on navigating the system and available information tomorrow.



PRFA status update:

Seafood Safety	Approved
Gordon Gunter and Weatherbird II Cruises	Approved
HF Radar	Being reevaluated by modelers for resubmission for funding, likely directly to BP.
Recreational Fishing	ORR and NMFS are pursuing the rec. fishing assessment as a NRDA study
Remote Sensing Activities by NGS	In review by SSC.
Thomas Jefferson / WHOI cruises for mapping sub surface areas west of the Mississippi Delta for potential hydrocarbons and dispersants	Approved
ORR base increase by $7.7M	Approved

NOAA Roles: Many personnel are on scene and many more are engaged remotely. Additional NOAA assets are being made available for the spill.

Office of Response and Restoration (OR&R)

- Scientific support to the U.S. Coast Guard and Unified Command

Emergency Response Division (ERD)

- Predict oil fates and effects
- Overflight observations and mapping
- Identify resources at risk
- Recommend appropriate clean-up methods
- Manage data and information

Assessment and Restoration Division (ARD)

- Plan for assessment of injuries to natural resources
- Coordinate with state and federal trustees

National Weather Service

- Incident weather forecasts including marine and aviation

National Environmental Satellite, Data, and Information Service (NESDIS)

- Experimental imagery for spill trajectory forecasts
- Data Visualization

National Marine Fisheries Service (NMFS)

- Issues related to marine mammals, sea turtles, and fishery resources
- Public Affairs support to the Joint Information Center

Office of Marine and Aviation Operations (OMAO)

- USCG Liaison to the DCO Incident Support Team USCG Headquarters
- Aircraft and vessel support

Oceanic and Atmospheric Research

- Oceanographic and atmospheric modeling and data support.
- Gulf of Mexico Sea Grant programs providing technical advice on impacts to living resources and coastal communities.

National Ocean Service

- Support from ONMS for staffing and technical information
- Oceanographic modeling support
- Public Affairs support to Joint Information Center

Nearshore Surface Oil Forecast Deepwater Horizon MC252

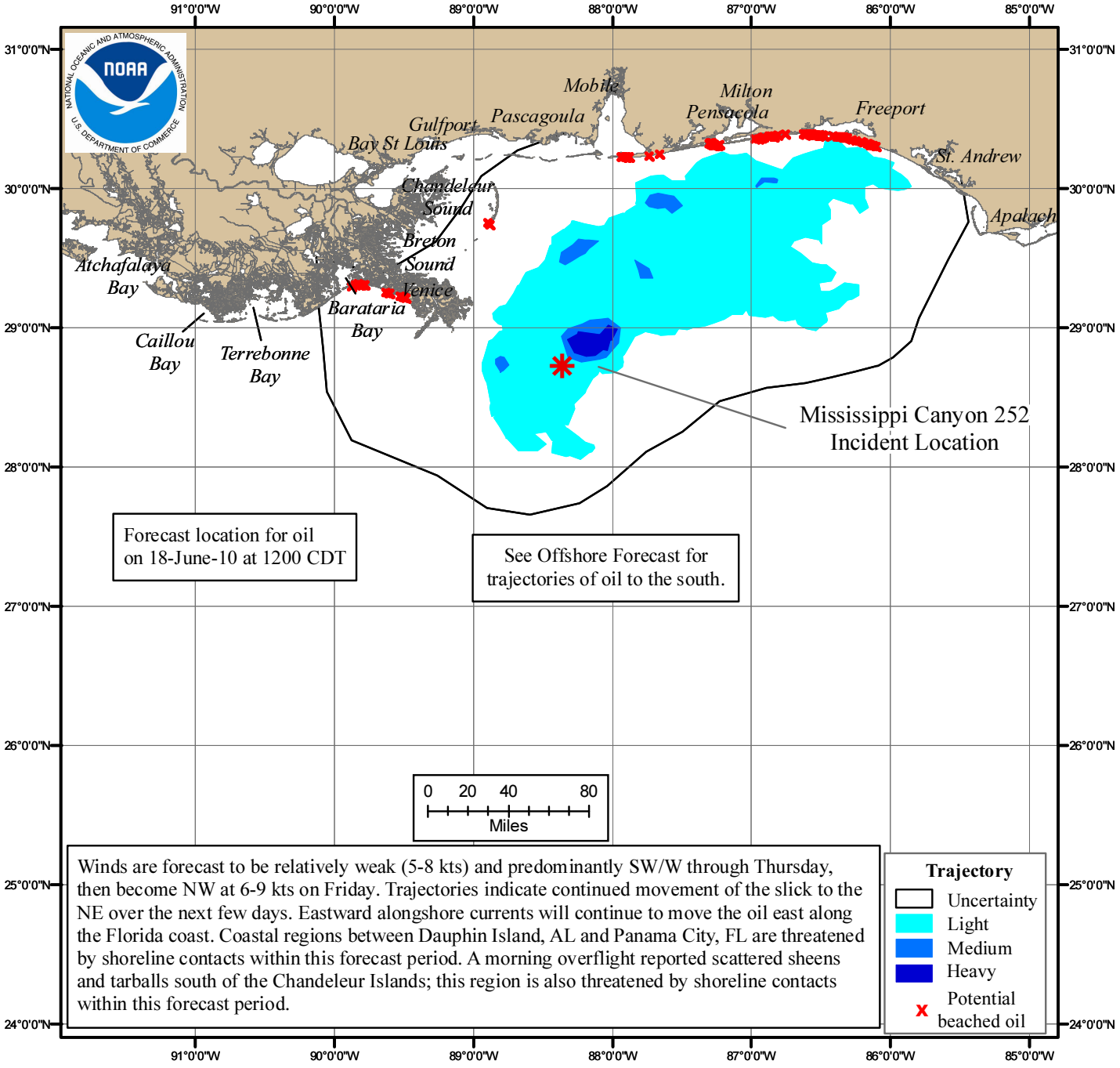
NOAA/NOS/OR&R

Nearshore

Estimate for: 1200 CDT, Friday, 6/18/10

Date Prepared: 2100 CDT, Tuesday, 6/15/10

This forecast is based on the NWS spot forecast from Tuesday, June 15 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, TGLO/TAMU, NAVO/NRL) and HFR measurements. The model was initialized from Tuesday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.





this scale bar shows the meaning of the distribution terms at the current time

Next Forecast:
June 16th PM



Shoreline Impact Outlook

Prepared Tuesday, June 15, 2010

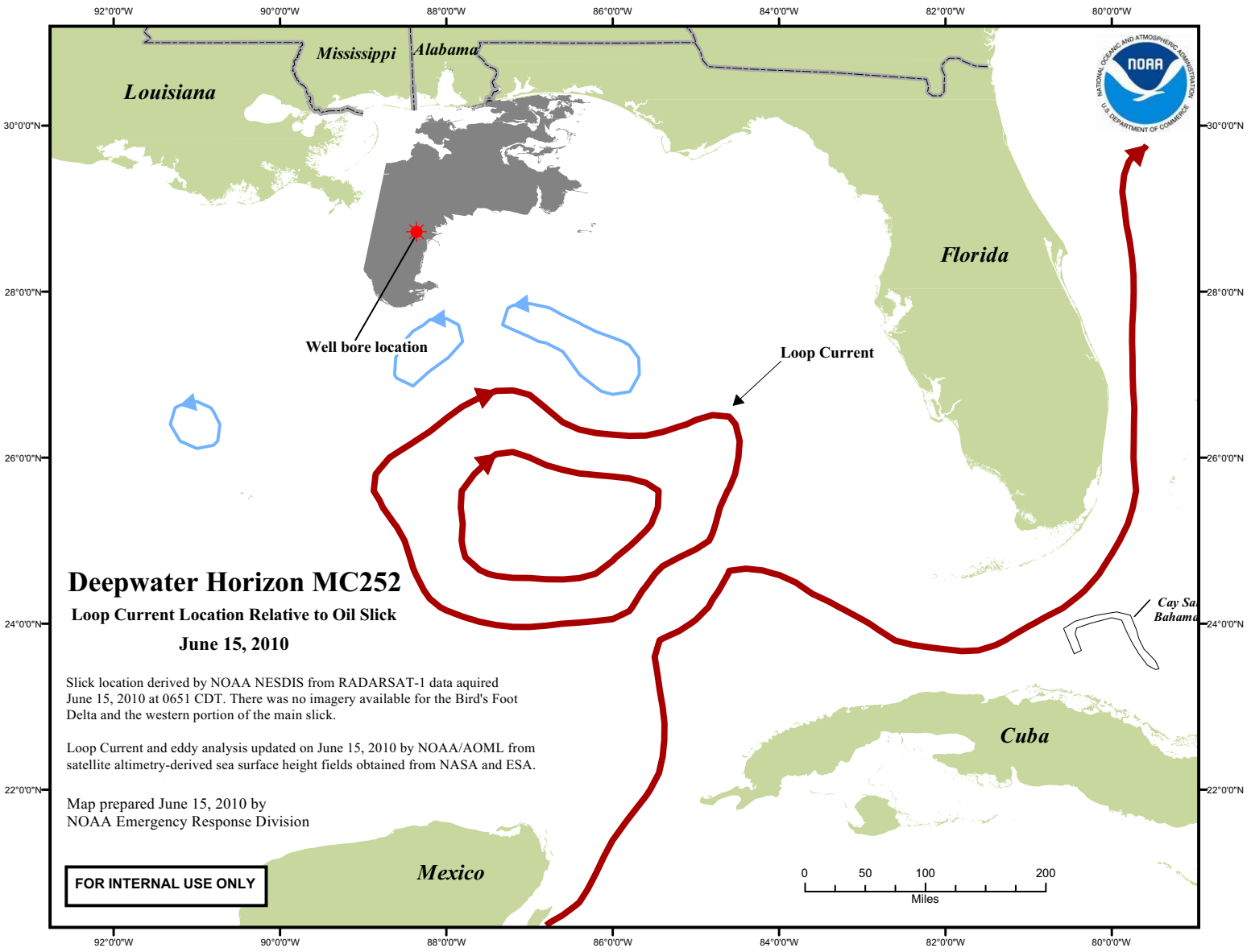
This map delineates threatened shorelines for the period of June 16-20 Because of the continuous leak at the source, there is potential to impact areas multiple times. Scattered tarballs which are not observable from overflight may impact shorelines ahead of the indicated dates. Forecasting beyond three days has greater uncertainty as to potential impacts.

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0 30 60 120

Miles

Document ID: 0.7.19.1837.3


92°0'0"W
90°0'0"W
88°0'0"W
86°0'0"W
84°0'0"W
82°0'0"W
80°0'0"W
30°0'0"N
28°0'0"N
26°0'0"N
24°0'0"N
22°0'0"N
Louisiana
Mississippi
Alabama
Florida
Cuba
Mexico
Cay Sa
Bahama
Well bore location
Loop Current
Deepwater Horizon MC252
Loop Current Location Relative to Oil Slick
June 15, 2010
Slick location derived by NOAA NESDIS from RADARSAT-1 data aquired June 15, 2010 at 0651 CDT. There was no imagery available for the Bird's Foot Delta and the western portion of the main slick.
Loop Current and eddy analysis updated on June 15, 2010 by NOAA/AOML from satellite altimetry-derived sea surface height fields obtained from NASA and ESA.
Map prepared June 15, 2010 by
NOAA Emergency Response Division
FOR INTERNAL USE ONLY
0
50
100
200
Miles
NOAA

TIME: 9:00pm CDT, June 15, 2010
TO: NOAA SSCs
FROM: NOAA Office of Response and Restoration / Emergency Response Division
Seattle, WA 98115

SUBJECT: Deepwater Horizon MC252 incident and the Loop Current

Summary The Loop Current pattern is not currently serving as a major mechanism to transport oil toward the Florida Straits. The northern section of the Loop Current has separated once again from the main Loop Current into a large clockwise eddy (Eddy Franklin). There continues to be no significant amounts of oil being moved toward the Loop Current or Eddy Franklin. However, there has been a confirmation of a scattered tarball field a week ago at the northeast corner of Eddy Franklin. Eddy Franklin may re-join the main Loop Current over the next few weeks. If this re-joining occurs, it would again provide a clear pathway for tarballs to move to the Florida Straits.

Observations There continues to be no evidence of high concentrations of oil in or near the Loop Current or Eddy Franklin. The visible sheens near the northern edge of Eddy Franklin appear to have dissipated. Satellite imagery analysis has identified no anomalies in the region for about a week. There have been no overflights to the region for a few days.

As discussed in previous reports, scattered tarball fields are often not visible from fixed wing aircraft or satellite observations. To confirm the presence of tarballs, the vessel R/V Walton Smith traveled to the northeast corner of the Loop current last week, where frequent sheens had been observed in the satellite imagery. They found "little orange particles and some bits of more aggregated red oil" at location 26°46.07'N--86°03.77'W. The ship took samples that were shipped to LSU. Initial results indicate that there is a high probability that the "red oil" did come from the spill.

That tarball field was found near the boundary of a counter clockwise eddy located to the northeast of Eddy Franklin where there had been frequent sheens observed by satellite analysis and last Friday's overflight. We expect some of the oil in that location to remain in the counter clockwise eddy, but some may be drawn into Eddy Franklin. Once in Eddy Franklin, we expect most of it will remain there, circulating around the central Gulf.

It appears that Eddy Franklin has once again separated from the main Loop Current. All of the models we are examining and the sea surface height analysis show the surface expression of the eddy to be separated. Two AOML drifters deployed by the R/V Walton Smith have followed Eddy Franklin clockwise around to the west. We continue to monitor the situation closely.

The sheen that has been pulled from the source region toward Eddy Franklin continues to be stretched out and thinned and is no longer showing up in satellite imagery. A NOAA overflight (Wesley) to the southeast of the spill site Saturday (6/12) observed "nothing heavy at the tail" extending toward Eddy Franklin. We do not expect larger

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concentrations of oil to move toward the Loop Current within the forecast period.

We do expect that there are now same scattered tarball fields circulating in Eddy Franklin. Most of these tarballs will continue to circulate in the eddy, while they continue to weather and spread and become widely scattered. If and when Eddy Franklin re-connects with the main Loop current, a fraction of these tarballs may move to the Florida Straits. We expect that any tarballs that persist long enough to ultimately enter the Florida Straits will be highly weathered and widely scattered. In order for tarballs to reach shorelines, there must be a persistent shoreward wind to bring them to the coast. At this time, we estimate that the fraction that may reach shorelines may be slightly above background levels of tarballs already on the Florida shorelines.

How we are monitoring We continue to monitor the Loop Current characteristics from a number of satellite and model sources, a vessel contracted by BP to monitor at the northern front, and drifter buoys dropped in or near the Loop Current over the last few weeks.

The US Coast Guard will be conducting regular overflights to look for signs of significant oil over the Florida Shelf and Loop Current; a NOAA observer will be on board every 2-3 days.

The vessel Richard L. Becker conducted visual observations and sampling operations in Eddy Franklin today. Transparent sheens and Trichodesmium plankton were observed. Plankton net tows found tiny bits of well weathered tarballs in one of the tows. The type and concentration of the tarballs were consistent with typical background concentrations in the region. No fresh oil was observed.

In addition, a sentry plan has been put in place by the Florida Peninsula Incident command. It consists of vessels transecting the Florida Current, west of the Dry Tortugas, in order to measure the tarball concentrations entering the Florida Straits. This activity should serve to provide a warning if significant tarball fields approach the Florida Straits. To date they have not reported any tarballs.

What can be expected in the future It is likely that at some point in the future, another fraction of the oil will move south from the spill site. If Eddy Franklin remains separated from the Loop Current, most of the oil will circulate around the central gulf, weathering and dissipating long before nearing any shorelines. If Eddy Franklin re-joins the main Loop Current, any oil moved to the northern extent of the eddy will once again have a pathway to the Florida Straits and beyond. We will continue daily monitoring of the Loop Current in order to monitor this re-connection.

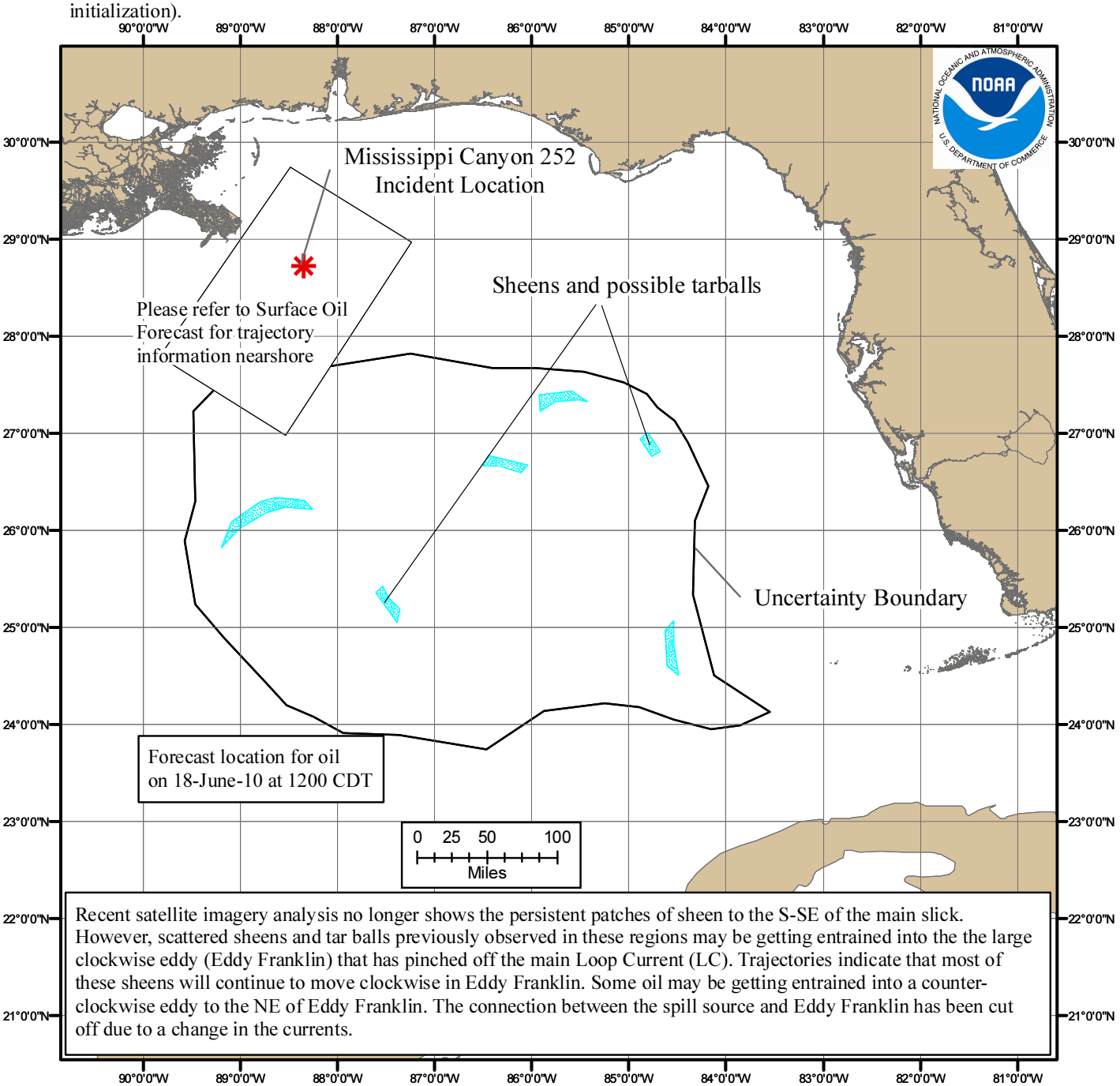
Document ID: 0.7.19.1837.5

Offshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R **Offshore**

Estimate for: 1200 CDT, Friday, 6/18/10
Date Prepared: 1900 CDT, Tuesday, 6/15/10

Currents were obtained from four models: NOAA Gulf of Mexico, NavO/NCOM , NRL/IASNFS, and NC St./SABGOM. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from June 11 to June 14 satellite imagery analysis, and a June 11 CG/NOAA overflight. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).



Recent satellite imagery analysis no longer shows the persistent patches of sheen to the S-SE of the main slick. However, scattered sheens and tar balls previously observed in these regions may be getting entrained into the the large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current (LC). Trajectories indicate that most of these sheens will continue to move clockwise in Eddy Franklin. Some oil may be getting entrained into a counter-clockwise eddy to the NE of Eddy Franklin. The connection between the spill source and Eddy Franklin has been cut off due to a change in the currents.



this scale bar shows the meaning of the distribution terms at the current time

Next Forecast:
June 16th PM

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Document ID: 0.7.19.1837.7

Document ID: 0.7.19.1837.8

Received(Date): Wed, 16 Jun 2010 07:46:44 -0400
From: "Mark.W.Miller" <Mark.W.Miller@noaa.gov>
Subject: Clearance for Bahama Response
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Jim Turner <Jim.Turner@noaa.gov>, Allison Reed <Allison.Reed@noaa.gov>
Response to Embassy Nassau_DWH questions_06_14_10.doc

In light of the discussions held yesterday doesn't this require to go through NOAA clearance?

Mark

NOAA Response to Embassy Nassau 13 June 2010

1) **What is taking place with respect to the oil spill under the surface of the Sea? Specifically, to what extent has the oil seeped into the water column?**

The Deepwater Horizon MC252 oil spill response raises concerns that spilled oil may form a large plume of oil at toxic concentrations below the water surface. This information is meant to summarize our current understanding of how subsurface oil (below the surface mixed layer) behaves, based on our experience at other oil spills, research, monitoring, and computer simulations. At this time as a result of sampling and analysis, we believe that there are no cohesive subsurface plumes of oil in the areas sampled beyond the immediate area of the well. Observations and modeling indicate that:

- Average subsurface oil concentrations will be in the parts-per-million (ppm) range within a few kilometers of the wellhead, and will continue to decrease away from the source.
- There can be parcels of water, even at long distances from the source, that contain oil concentrations much higher than average because oil droplets do not mix uniformly into the water column.
- Subsurface oil droplets will not coalesce and create higher oil concentrations in a coherent plume.
- Physical, chemical, and biological processes will continue to reduce water column oil concentrations over time.

The Deepwater Horizon is now releasing methane gas and oil in a turbulent mixture from 5,000 feet below the surface. . Initial estimates are that the plume of oil and gas rises from the release point with most oil reaching the surface in about three hours. During the trip to the surface some of the oil dissolves in the water column and some forms droplets. Deepwater Horizon MC252 oil has a density about 85 - 90% of that of water, making it buoyant. When it reaches the surface the oil floats. The pressure propelling the oil out of the wellhead is strong enough that it can cause at least some of the oil to form water-in-oil emulsion, or mousse. While mousse is denser than the oil, it is less dense than the water, and so it too naturally rises to the surface.

Dispersing oil at depth, either naturally or chemically, has the effect of breaking up the oil into small droplets within the water column. Dispersed droplets vary in size, and droplets of different sizes take different lengths of time to rise to the water surface. Very small droplets, less than about 100 microns in diameter, rise to the surface so slowly that ocean turbulence is strong enough to keep them mixed within the water column for months. These very small droplets behave as if they were neutrally buoyant, and remain at depth. These dynamic processes can result in oil remaining in subsurface waters in the area around the well or being transported beyond 10 km.

Chemical dispersants have been injected into the oil as it is released from the riser to increase subsurface dispersion. Injecting chemical dispersants into the oil jet at the sea floor is likely to increase the percentage of oil forming droplets small enough to be neutrally buoyant. The

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neutrally buoyant oil droplets dispersed at the well are being released into ocean waters below the pycnocline[1].

2) **What effect is the oil spill having on the sea floor and what are the medium and long term effects of this disaster on that environment?**

The environmental repercussions of dispersed droplets of oil at depth and on the sea floor are not well known at this time while oil is still flowing into the water. NOAA is working with environmental agencies across the US government as well as academic institutions to better understand the short, medium and long-term impacts to the deep ocean ecosystem and to evaluate appropriate remediation measures. NOAA is leading several interagency natural resource damage assessment working groups focused on deep ocean habitat including, but not limited to, deep-sea corals, sediment, water and tissue.

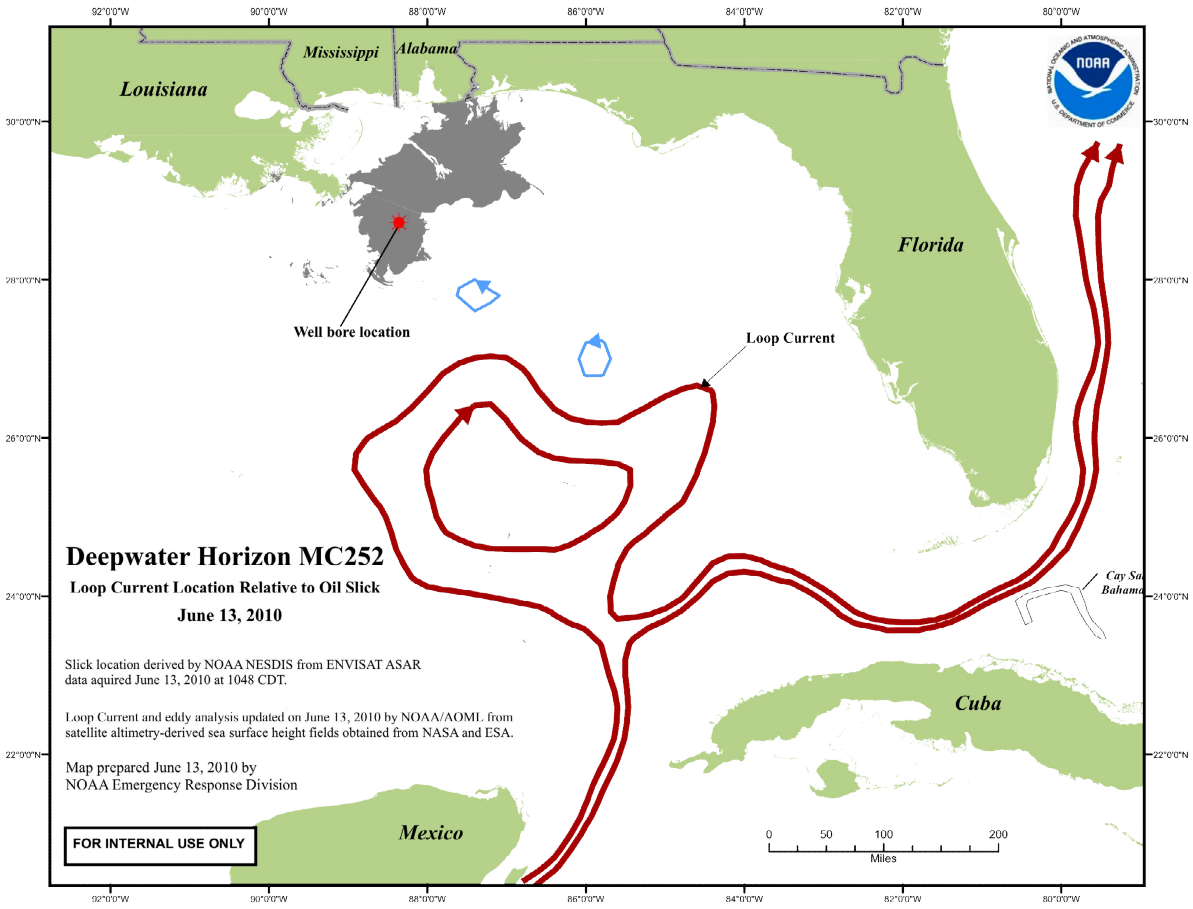
3) **What measures can be taken to protect this ecologically sensitive and remote area (Cay Sal Bank)?**

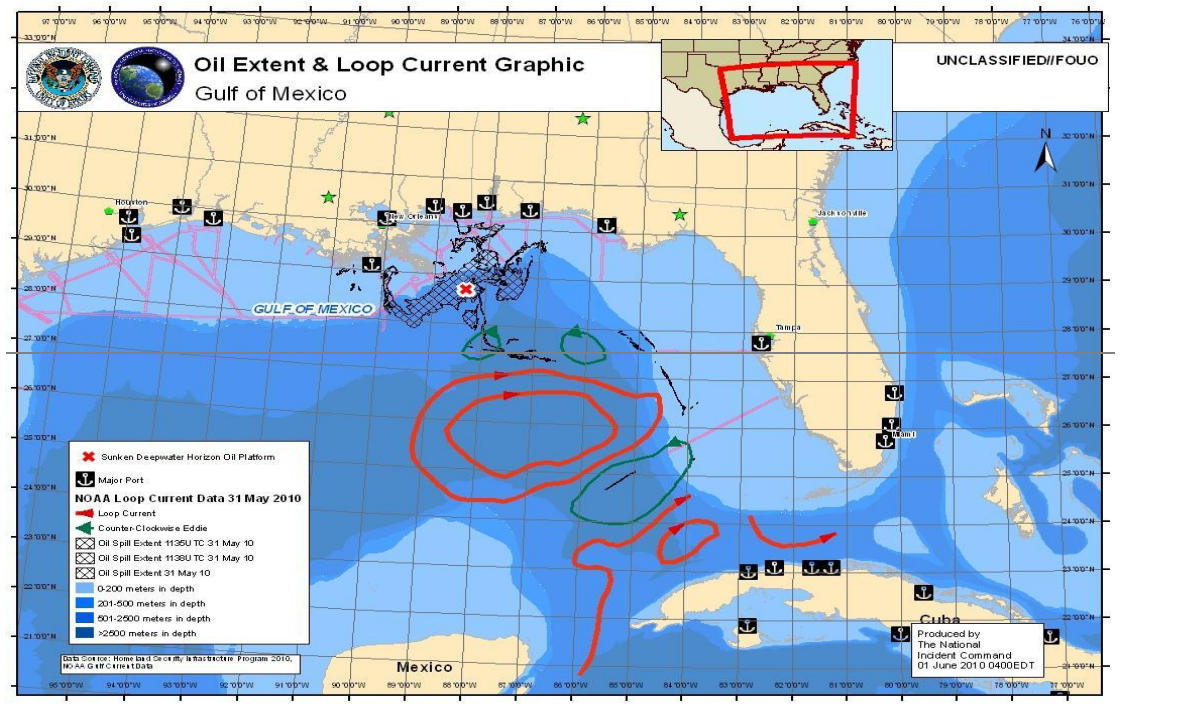
Should any surface oil exit the Gulf of Mexico it will have been in the water at least 20-30 days. During that transit time, the natural processes of evaporation and dispersion would reduce the oil volume significantly. The remaining oil could be composed of streaks of emulsified oil and tar balls.

[1] The pycnocline is a region in the ocean where water density increases relatively rapidly with depth. It has the effect of retarding movement of fluids from below to above, or vice versa.

Document ID: 0.7.19.1926.1

NOAA Response to Embassy Nassau 13 June 2010





4) What are the safety implications of the oil spill on recreational water and beach activities?

On beaches and land, fresh or emulsified oil can smother plants, birds, and animals and can create a skin contact hazard for people. Volatile organic compounds, such as PAH can pose an inhalation hazard to people working near fresh oil, sheen, or emulsified mousse. PAHs can cause a persistent environmental hazard if the oil penetrates substrates or is not removed from beaches.

It is unlikely that slicks of fresh or emulsified oil will reach Bahamian waters, cays and islands; however, there is a possibility that tarballs could impact the shoreline, especially near Cay Sal Bank. Tarballs typically range in size from tiny pellets that are the size of pencil erasers (10-20 mm) up to several cm across. Occasionally, tarballs stick together to form larger tarmats. Upon reaching the shoreline, tarballs may soften in hot sun, posing hazard to birds and marine animals. Prolonged skin contact may cause allergic reaction or rash. This is a potential concern for recreational shorelines.

5) What is the effect of the chemical dispersant that is being used on the water and environment? What dangers are there from these chemicals on seafood?

When an oil spill occurs, there are no good outcomes. Dispersant use is one of several tools that may be employed, individually or in combination, to reduce consequences of an oil spill. Surface application of dispersants results in a "plume" or "cloud" of oil droplets just below the water surface. This dispersed oil mixes vertically and horizontally into the water column and is rapidly diluted. Because the surface area of small droplets is large relative to the volume of oil, bacteria and other microscopic organisms are then able to act more quickly and effectively to degrade the oil. Dispersants are generally less toxic than oil.

When this crisis occurred, U.S. Coast Guard and the U.S. Environmental Protection Agency (EPA) granted BP authorization to use an approved dispersant on the surface of the water in an effort mitigate the impact of the spill. Preliminary testing results indicate that subsurface use of the dispersant is effective at reducing the amount of oil from reaching the surface—and can do so with the use of less dispersant than is needed when the oil does reach the surface. While BP pursues the use of subsurface dispersants, the U.S. Government conducts regular analysis of its effectiveness and impact on the environment, water and air quality, and human health through a rigorous scientific monitoring program.

To date, two dispersants have been used on the response, Corexit 9500A and 9527A. Details on these chemicals are available on the U.S. National Contingency Plan Product Schedule (http://www.epa.gov/emergencies/content/ncp/product_schedule.htm).

When considering the use of a dispersant in the deep ocean, the EPA and Coast Guard weigh the effectiveness of the dispersant at such depths; the benefits of preventing the oil from rising to the surface and eventually hitting the shore where it is likely to do significant damage to

birds, wetlands and aquatic life; and the long term impacts of the dispersant mixed with oil in deeper waters.

Surface use of dispersants decreases the environmental risks to shorelines and organisms at the surface and, when used this way, dispersants break down over several days. While the long-term effects on aquatic life are unknown, the current strategy to cautiously use dispersants given the characteristics of MC252 oil and the current environmental conditions provides the greatest opportunity for mitigation. Recently, BP was directed to scale back on the use of dispersants.

6) How will we address what is likely to be slumping demand for seafood based on lower consumer confidence in the safety and quality of seafood from the Bahamas - in particular the lucrative lobster industry? How do we detect levels of oil or chemical dispersant in food and the water it is not something regularly tested for, nor is it easy to detect?

Crude oil has the potential to taint seafood with flavors and odors imparted by exposure to hydrocarbon chemicals. NOAA National Marine Fisheries Service (NMFS) operates a Seafood Inspection Program and is the recognized Competent Authority for seafood export certification when required. The agency also operates a system of science centers including laboratories with experts in the field of toxicology and the impacts of oil spill contamination.

The U.S. Government is finalizing protocols to prevent tainted products from entering the marketplace. The protocols include sampling of the waters of the Gulf of Mexico, sampling of fisheries species potentially affected, sampling of products in the marketplace, and closing affected areas to commercial fishing contaminant levels in seafood products are deemed to be unsafe. Analytical and sensory methods are based on internationally accepted criteria. The program is also finalizing strict protocols for the reopening of areas closed to commercial fishing. Fishing grounds will be reopened ONLY when the products are deemed safe for consumption by regulatory agencies. Consumers should expect commercially available Gulf seafood to be of the same quality that people have come to expect from the Gulf.

NOAA continues to monitor the health of the commercial fish stocks within the United States Exclusive Economic Zone (EEZ). While we do not have complete data yet, we have not yet seen any effect on fish stocks outside of our closed areas although we continue to monitor. Up to date information on current fisheries closures can be found on the following web site: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm

Embassy Nassau may want to consider scientists and/or officials responsible for Bahamian food safety to visit ongoing seafood safety operations in the Gulf of Mexico. For more information on the NOAA Seafood Safety Inspection Program, please visit www.seafood.nmfs.noaa.gov

7) There was widespread appreciation of the offer for training and technological assistance in using and applying NOAA modeling systems.

NOAA looks forward to working with Bahamian government to build capacity to prepare for, respond to and recover from oil pollution threats from the Deepwater Horizon. We understand training for modelers is the most urgent need.

8) How long will the threat of tar balls exist?

Tarballs represent the final stage in the weathering of oil that enters the sea from accidental spills, vessel operations, illicit discharges, or natural seeps. A series of weathering processes begins to alter crude oil as soon as it is released to the water from a spill or natural seep. Fresh crude oil is a complex mixture of thousands of chemical compounds. Within hours of reaching the water surface, the lightest-weight chemical components have evaporated. Meanwhile, soluble chemical components dissolve into the water. Breaking waves dislodge tiny pieces from patches of oil and disperse those pieces downward into the water column. Microbes begin to degrade the oil by breaking apart the long chain molecules within it. The result of these weathering processes is the tarballs that you might encounter on a beach or observe floating in the water. Tarballs typically range in size from tiny pellets that are the size of pencil erasers up to a few inches across. Occasionally, tarballs stick together to form larger tarmats.

Tarballs are carried by currents to beaches, where you might spot them in natural "collection areas." Typically, these are areas high on the shore where wrack (marine vegetation), debris, and trash naturally collect. Tarballs may be mixed with sand or pebbles, or you might just see small tar stains on plastic bottles and trash. We are not certain where and how far tarballs originating from the Deepwater Horizon wellhead may travel or for how long they will persist once they reach shore. But results from research studies—which have included shoreline surveys and vessel surveys using special nets to sample tarballs from the water—provide some information about where tarballs common in the Gulf might travel. For example, research has shown that more tarballs have been found on windward than leeward shorelines generally.. More tarballs have been observed floating in the Loop Current and Florida Straits than in other open waters in the region.

Taken together, these studies tell us that tarballs are common in the Gulf of Mexico region, and originate from many sources, not just major oil spills. Tarballs have been monitored on shorelines and in the waters off the U.S. Atlantic, Gulf, and Caribbean coasts for at least 6 decades. A given tarball on a Gulf of Mexico beach might have originated from a major incident such as the Ixtoc I oil spill, vessel operations, accidents such as the many smaller oil spills caused by Hurricanes Katrina and Rita in 2005, natural oil seeps, or other causes.

9) Please provide a written explanation of the effect of the oil spill on the water column.

The spilled oil is subjected to a variety of dispersal processes highly dependent on weather conditions. Once on the surface, a portion (20-30%) of the oil evaporates into the air and a small amount (10%) of the oil naturally disperses into the water column.

In general, during the first forty-eight hours after the oil is released into the environment, 10-20% of the oil could be chemically dispersed or burned and10-15% of oil could be mechanically recovered. Therefore, the remaining roughly 25-50%, with 50% being worst case, could ultimately impact shorelines and the water column.

The greatest concern for water column impacts are to the tiny planktonic organisms present in the mid- to upper water column (upper 200m), such as copepods, and larvae of crustaceans and fish. In the aftermath of other oil spills, with or without dispersant use, copepods have been observed feeding on tiny oil droplets. There are two outcomes from this. First, the copepods were excreting oil-contaminated fecal pellets which are much denser than the original oil droplets and which can fall down through the water column, possibly to the sea floor. Second, filter-feeding forage fish are more likely to ingest oil not from the tiny droplets but from feeding on living copepods and other planktonic crustacean that themselves are consuming the tiny oil droplets. Therefore, impacts to organisms living in mid and upper water column habitat are at greatest risk close to the source of the oil. As the oil moves away from the source, disperses and begins the weathering process, acute risks to water column organisms becomes more difficult to determine as oil droplets do not mix uniformly into the water column.

10) Please provide additional information on the current state of the sub-sea water under the oil slick.

Please see answer to question #1.

Received(Date): Wed, 16 Jun 2010 17:38:47 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: 6.16.2010 DWH ACTIONs and UPDATES
To: DWH leadership <DWH.Leadership@noaa.gov>
MMST Health and Stranding Update 06-15-10.doc
NOAA PA Daily Media Tracking Report - NOS 06-16-10.xls
OMAO_Assets_Gantt_Chart_061610.xlsx
Proposed OMAO Asset DWH Response Schedule 061610.doc
NRDA Activities Report_6_16_10.doc

PRIORITY RESPONSE OPERATIONS - NIC/ICC/NRT	Source Control: o Top Hat still listing at approximately 12 degrees ; 1 vent valve closed, bu valves today. o Q-4000 (choke line) flaring operations in progress at 2,387 bbls/day incr afternoon; goal of 10,000 bbls by tomorrow night. · EPA Air monitoring: Air monitoring teams active near Long Beach, MS Pensacola, FL to address odor complaints NRT – No report NIC Activities · Mass Balance: Additional discussions about Mass Balance/Oil Budget (M USCG. There are questions about whether the pressure gauges are functior measuring what they are assumed to. This may impact the high end of the resolution for the pressure measurements before more detailed MB/OB car · Eastern Senators: NIC asked to coordinate a response to the letter from t NOAA. NIC contacts sent to David Holst who is putting together the NOA · IATAP: IATAP activities are picking up. Phase 2 - a more detailed techr probably require additional NOAA staff including a Contracting Officer to the Broad Agency Advertisement (BAA) from USCG.
SCIENCE	Please see attached * NOAA Science briefing for tomorrow June 17th * Full report on P-3 air quality data (briefed in slides) * OMAO asset reports
LMR	Fisheries Closure * There was a modification to the closed area in the Gulf of Mexico EEZ o Today's modification extends the northeastern closure boundary ea Florida, to encompass the projected path of oil illustrated in the 72-hour tra o The closure measures 80,806 sq mi (209,286 sq km) and covers ab compared to the June 7 closure comprising 78,264 sq mi (202,703 sq km), EEZ. o The map of today's closed area and an overlay map with the previo modification are attached. * Louisiana Department of Wildlife and Fisheries announced the follow and commercial fishing in portions of inside waters and the territorial seas in St. Bernard Parish effective June 15, 2010. This area was originally clos measures. The most recent information from shoreline cleanup assessment areas. o The portion of Breton and Chandeleur Sounds as described by the

495.1 and state outside waters seaward of the inside/outside shrimp line no
54 seconds north latitude will open to recreational and commercial fishing
following areas which shall remain closed to recreational and commercial
o Those inside and outside state waters bounded on the north by 30 d
north latitude and on the south by 29 degrees 43 minutes 58 seconds north
territorial sea boundary westward to 88 degrees 55 minutes 14.6 seconds w
o The portion of inside waters extending north of Martin Island at 29
seconds north latitude and south of Isle au Pitre at 30 degrees 09 minutes 2
from 89 degrees 7 minutes 00 seconds west longitude westward to 89 degr
west longitude.

LMR (2)

Seafood Inspection
* Fisheries has had initial discussions with FDA on the hot line for the p
closings and to report oiled fish.
Marine Mammals and Sea Turtle Health and Stranding
* 449 total sea turtles verified to date within the "designated spill area" (
report)
o 383 stranded (increase of 12 from June 14)
+ 350 of the stranded were found dead (net increase of 12 from J
+ 33 of the stranded were found alive (no change from June 14)
+ 4 recovered alive but died in rehab (no change from June 14)
+ 4 turtles released alive (no change from June 14)
+ 25 live turtles in rehabilitation (no change from June 14)
o 66 turtles collected during directed turtle sampling efforts (increas
+ 60 live turtles in rehabilitation (increase of 7 from June 14)
+ 3 turtles collected dead (no change from June 14)
+ 3 turtles died in rehabilitation (no change from June 14)
+ 231 carcasses to be necropsied, if decomposition stage warrant
14)
* To date, visible evidence of oil has been documented externally on
5 live stranded turtles (2 of which were caught in skimming operations).
* To date, visible evidence of oil has been documented externally on
sea turtle captured during directed turtle surveys.
* 45 dolphins have been verified to date within the "designated spill area
14).
o 43 were dead stranded dolphins (increase of 2 from June 14)
o 10 partial necropsies performed (e.g. due to scavenging or autolysi
14)
* Whale Necropsy Status (of the 1 dead stranded)
o 1 verified stranding but animal not collected due to stage of decom
(increase of 1 from June 14)
+ The verified whale had no evidence of external oil.
* The complete health and stranding report, turtle stranding map, dolphi
stranding map are attached

NRDA

1. Technical Working Group Updates
Shoreline: Forensic oil sampling occurred in West-South Terrebonne Bay
Terrebonne. Four teams went out in the field to complete pre-assessment s
Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Po
summaries below:

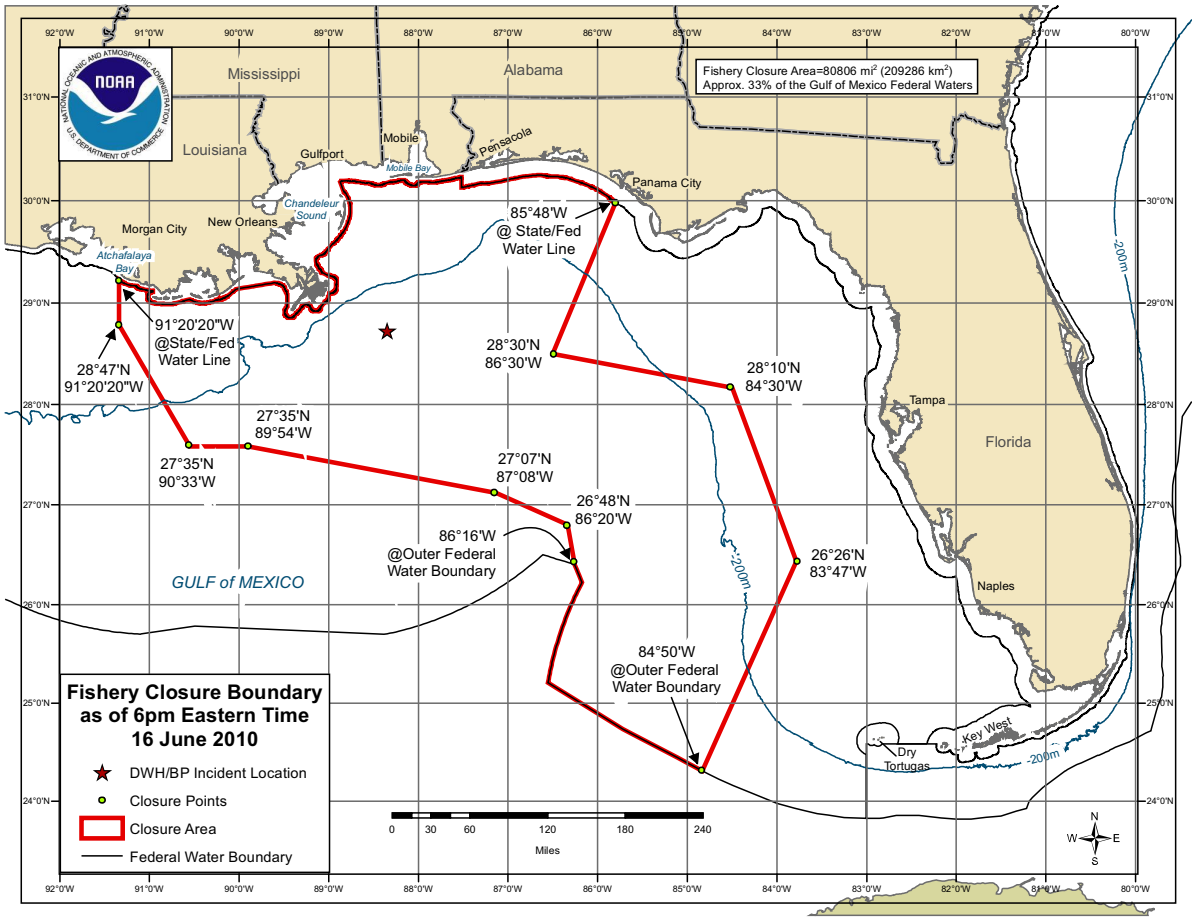
	Team 1 Shoreline pre-assessment from Myrtle Grove to Wilkinson Bay ne Vegetation oiled within areas without previous SCAT data and with previc varied between no visible vegetation oiling to a solid band of oil several fe within the water was predominately silver sheen with some sheening from Team 2 No report Team 3 Assessed shoreline of Whiskey Island. Waypoint and tracklog dat were collected from 7 (070-076) waypoints during the day's field effort. V starting near the center and collecting points toward the easternmost limits the area. We finished by progressing in a westward direction back toward SCAT data listed the entire shoreline as lightly oiled; however, surveys fou lightly with scattered tar balls. Team 3 reported in to NOAA Command C the ramp, at mid-day and again upon returning to the boat ramp at 1415. T problems during the field effort. Team 4 –assessed the northern and south eastern portions of the Bassa Bas with direct exposure to the Gulf of Mexico (southeast side) tended to have shorelines (northern) tended to have less oiling. The northern side of the is maps to be 'No Oil' (blue) but we found light oil consistently along this m side) with the direct exposure, the SCAT maps showed the shore to be very this to be moderate at the northern end, and light to moderate along the mi Sample Intake Teams – Samples processed at shoreline as of 6/15/10:
NRDA (2)	Chain of Custody data packages processed: 265 Number of Bottles Received: 3158 Chemistry: As of June 15th, approximately 4600 samples have been colle baseline and pre-assessment data collection. This total consists of approxi 20% sediment samples, and 5% or less of tissue, oil (tarballs), oil on water Water Column: NRDA sampling activities are ongoing aboard 2 vessels. NRDA sampling activities are ongoing aboard two vessels: · Brooks McCall: Conducting deep water sampling 2.5 km northwest of w · Jack Fitz: Returned to port due to mechanical problems on 6/14. Schedul · Ocean Veritas: Deep water sampling 5km W of wellhead. Altering plans signals. · Thomas Jefferson: Scheduled to depart today. May rendezvous with Jack survey operations. Awaiting final decision on rendezvous plan. Human Use: Conducted boat ramp counts at 4 ramps in Central FL, 1 in F LA. Shore counts and intercepts in AL. SAV: Currently identifying long-term sampling dates and sites for injury Marine Mammals/Turtles: Marine Mammal survey team aboard Gordon C whale preassessment survey.
ASSETS AND PLATFORMS	The following digital files are attached. Information is current as of Date 1. NOAA Platform Powerpoint showing current mapped locations of asse 2. OMAO Assets Excel Gantt Chart showing projects assigned to each as 3. Proposed OMAO Asset DWH Response Schedule Word document identifying impacts to NOAA projects should OMAO assets be tasked.
REGIONAL	no update
LEGISLATIVE / INTERGOV'T AFFAIRS	Conference Call for Interested Congressional Members and Staff and Inter GeoPlatform.gov Site * Offered an overview of the GeoPlatform.gov website to Congressiona

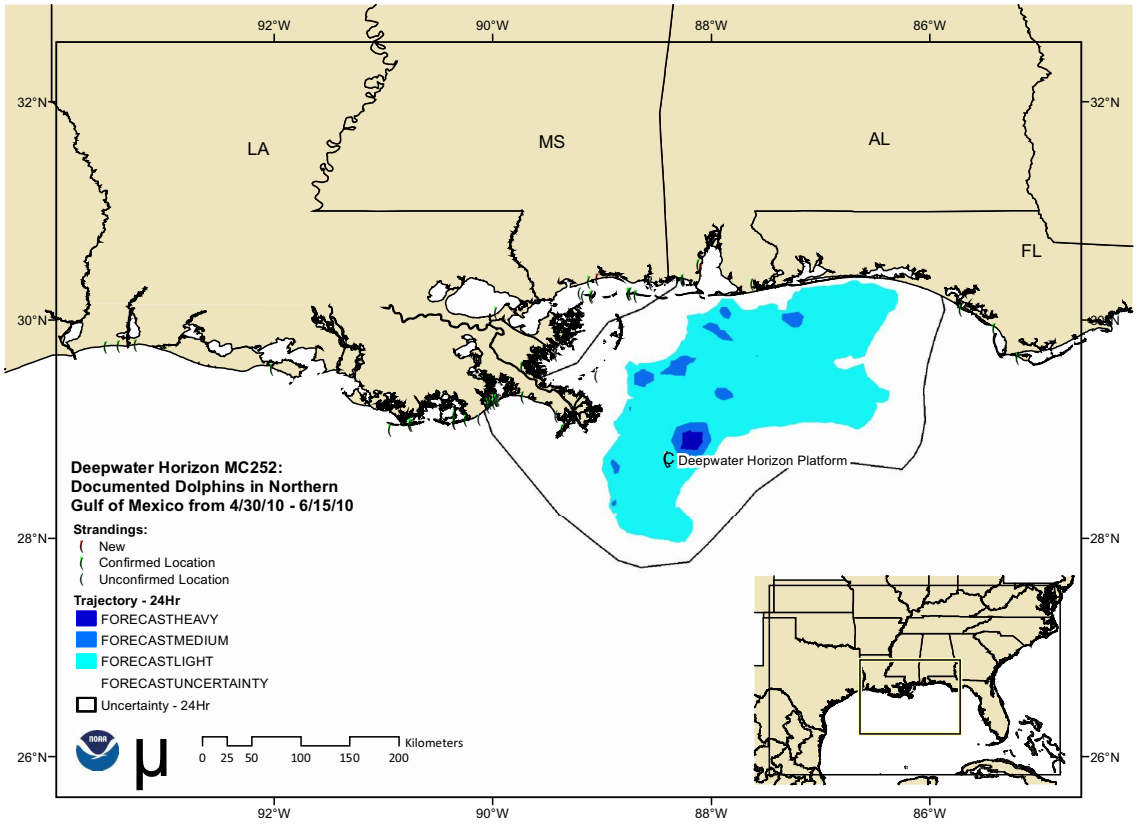
	* Highlighted the site's capabilities and provided an opportunity for the * Staff with NOAA's Office of Response and Restoration presented * Staff with the House Natural Resources Committee, Senate Commerce Rep. Gus Bilirakis (R-9th, FL) participated
COMMS / PUBLIC AFFAIRS	*Planning counter points ahead of CBS story about slow fed response to h *Planning media rollouts on long-term movement of oil and seafood safety on Mon. / Tues.
EXTERNAL ENGAGEMENT	*Interactions:* Telecon with White House Public Engagement/CEQ/federal agencies for o Informed them that Buck Sutter will participate in the Friday White Hou o Briefed them on intent to work with FEMA on additional hurricane prep outreach along Gulf coast · Requests for speakers with the following groups need to be confirmed: o GNODRP Meeting – New Orleans, LA – June 23, 2010 at 0:00 AM at 1 o Jackson County Republican Women's Group - Pascagoula, MS - July 12 and Ballroom o Kiwanis Club - Loc: TBD - July 14, 2010 · Working with OR&R to schedule a Geoplatform.gov WebEX with NGO · NOAA 101 Presentation in development through NOAA COMs, Externa assist with speaker requests that are coming in from local rotary clubs, cha *Complaint Emails:* · External Affairs has received 3 e-mails in the past 24 hours. We've respo included concerns about dispersant use and a cleanup vessel incident.** *Mass Notifications:* · E-mailed updated fishery closure information to national constituent lists
DATA INFORMATION	nothing new to report. report from 6.15.2010 Public use of www.geoplatform.gov/gulfresponse continues to increase (3. -Provided overview of geoplatform.gov to DHS-OMB DWH Integrated Se scheduled to Team for next Tuesday. -DHS standing up new Unified Command .gov site by this weekend, and w migration plans. -All NOAA Line Offices, NOAA GC and NOAA OCIO met with DOJ leg related to the preservation of records, identification of systems, and collec DWH Litigation Hold. NOAA will provide DOJ with a draft template of t needed to identify NOAA systems on which DWH data is being held and p is agreed to between DOJ and NOAA, a data call will be issued from the N -No update from EPA on air/water quality availability for public ERMA ap inquiring
IA/ INTERNATIONAL AFFAIRS	1. The Cuba Desk at State Department is hosting a large delegation on Fric oil spill will be raised. OIA provided comments on their talking points and 2. Awaiting JIC clearance on Bahamas responses. State is pushing also sir responses could be provided last week. 3. Provided update to State on National Hurricane Center's latest projectio pressure system in the Atlantic could develop into a tropical cyclone in the decreased from 40% to 10%) 4. Provided comments to Embassy Nassau on draft cable for the video con

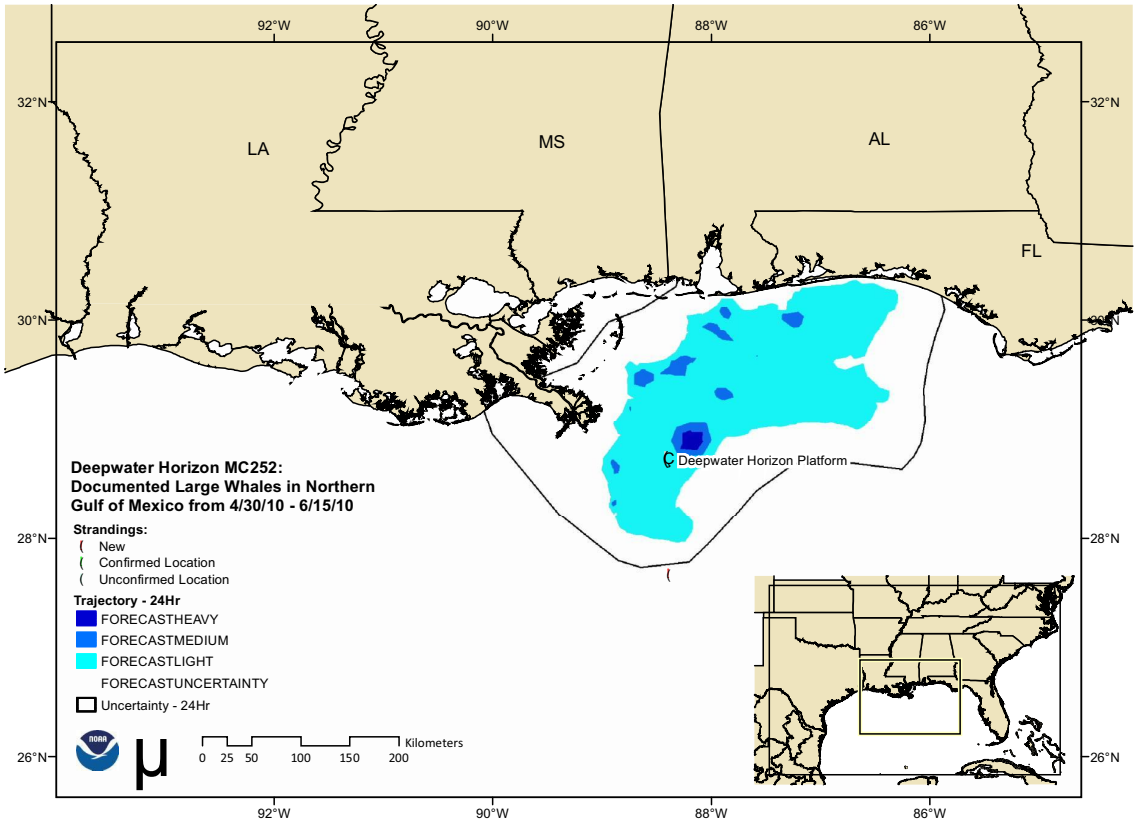
5. Forwarded to State information on arrangements and accommodations n
Bahamian scientist to Seattle to interact with NOAA modelers. Due to tim
request for foreign visit form, mid-July is the earliest time frame to consid
6. ICC Tasker #179: Dr. Lubchenco delegated a meeting with Dr. Alvarez
Dr. Robinson has Dr. Alvarez' contact information to make arrangements.
Tasker.

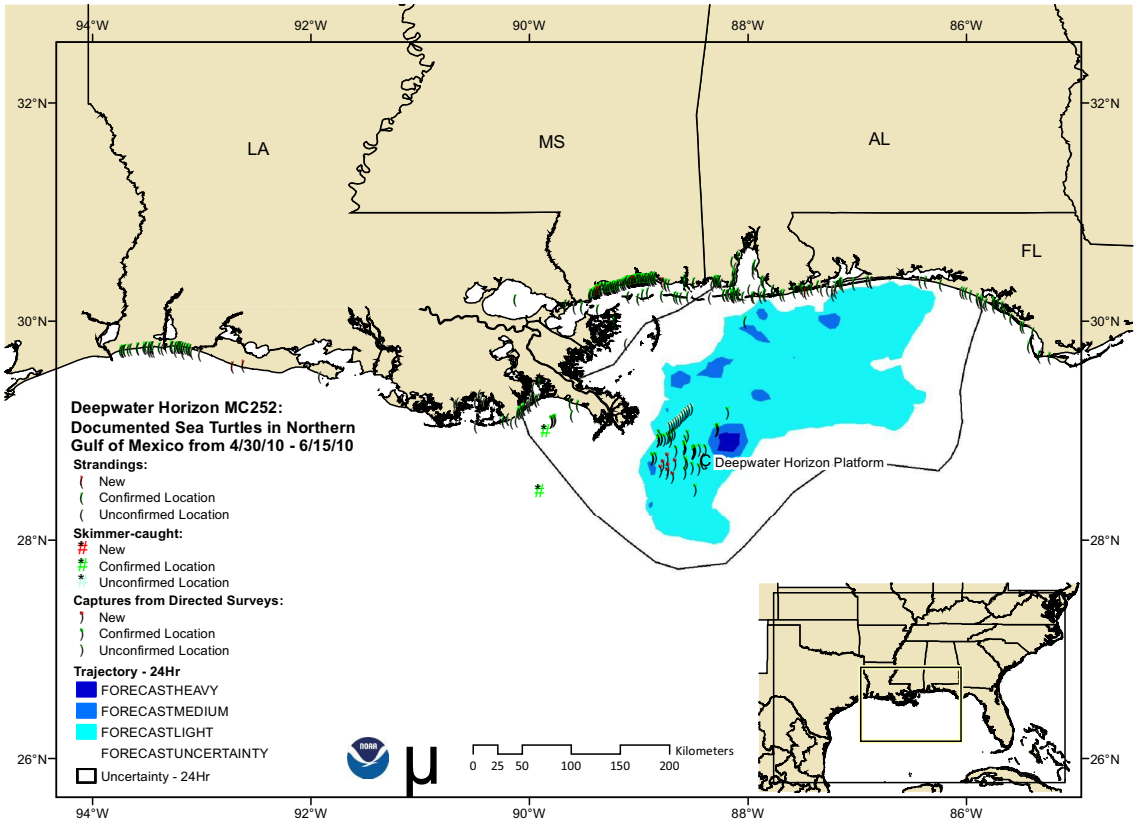
LEGAL / GC — no update

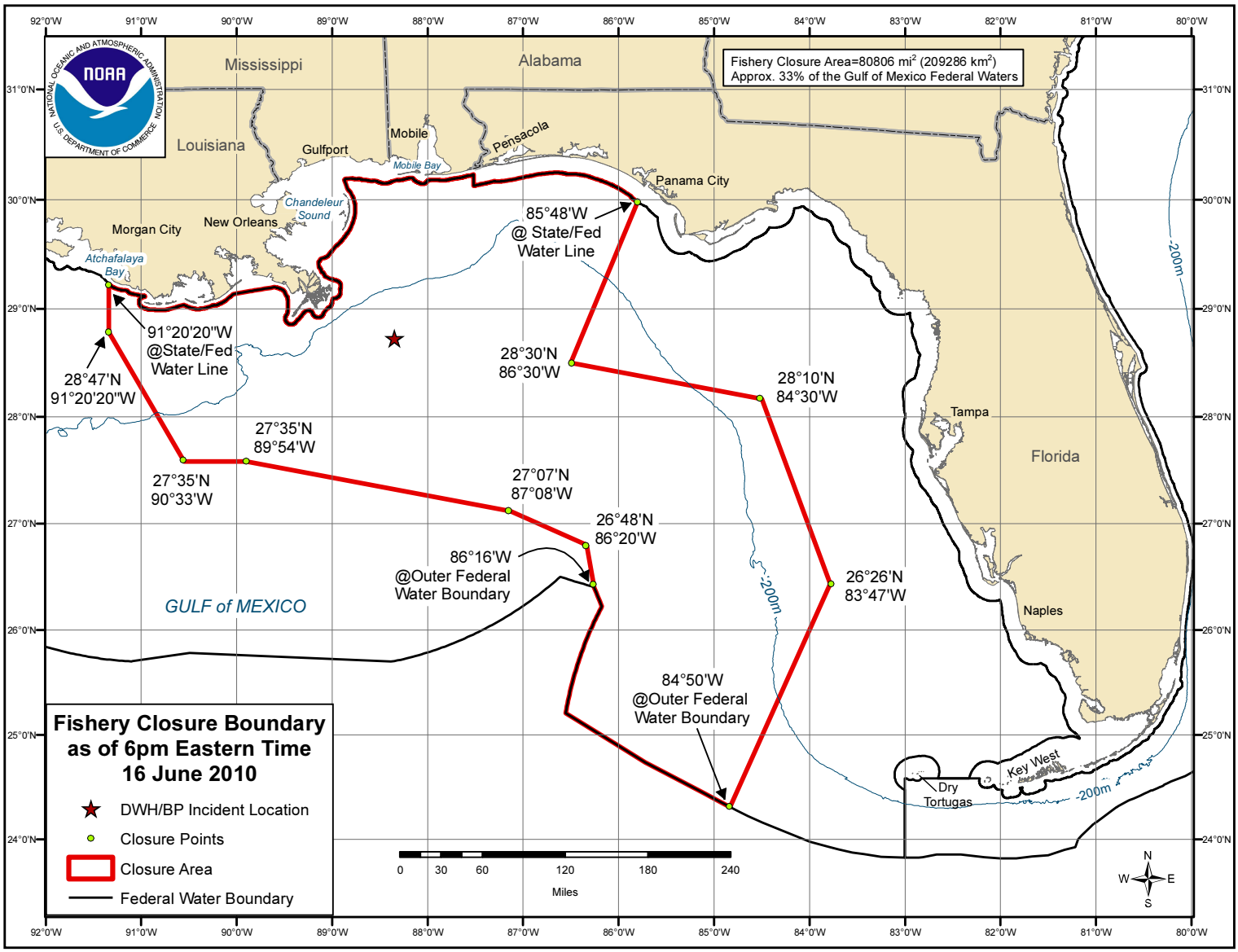
POLICY / BUDGET — no update



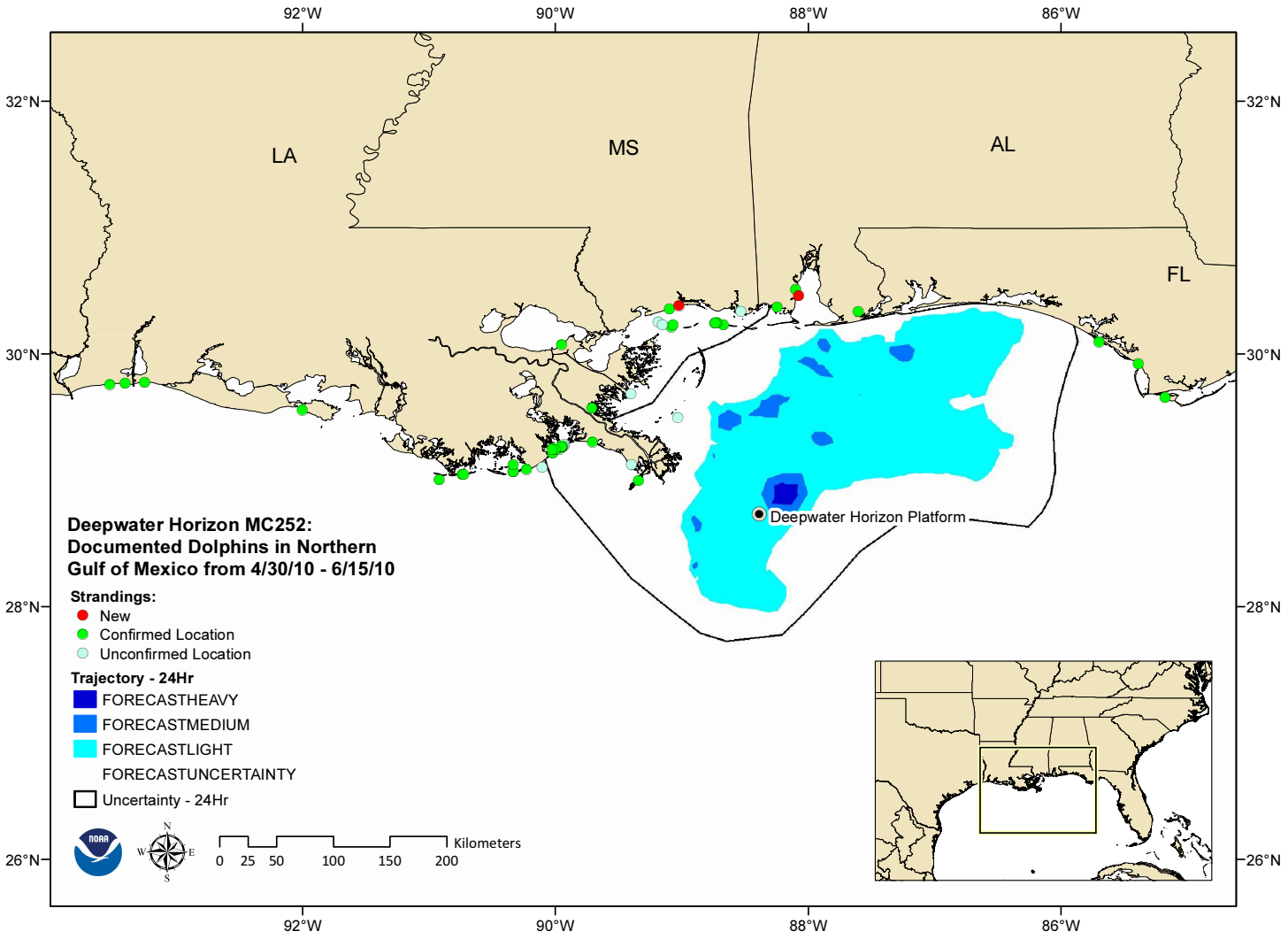

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Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/15/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
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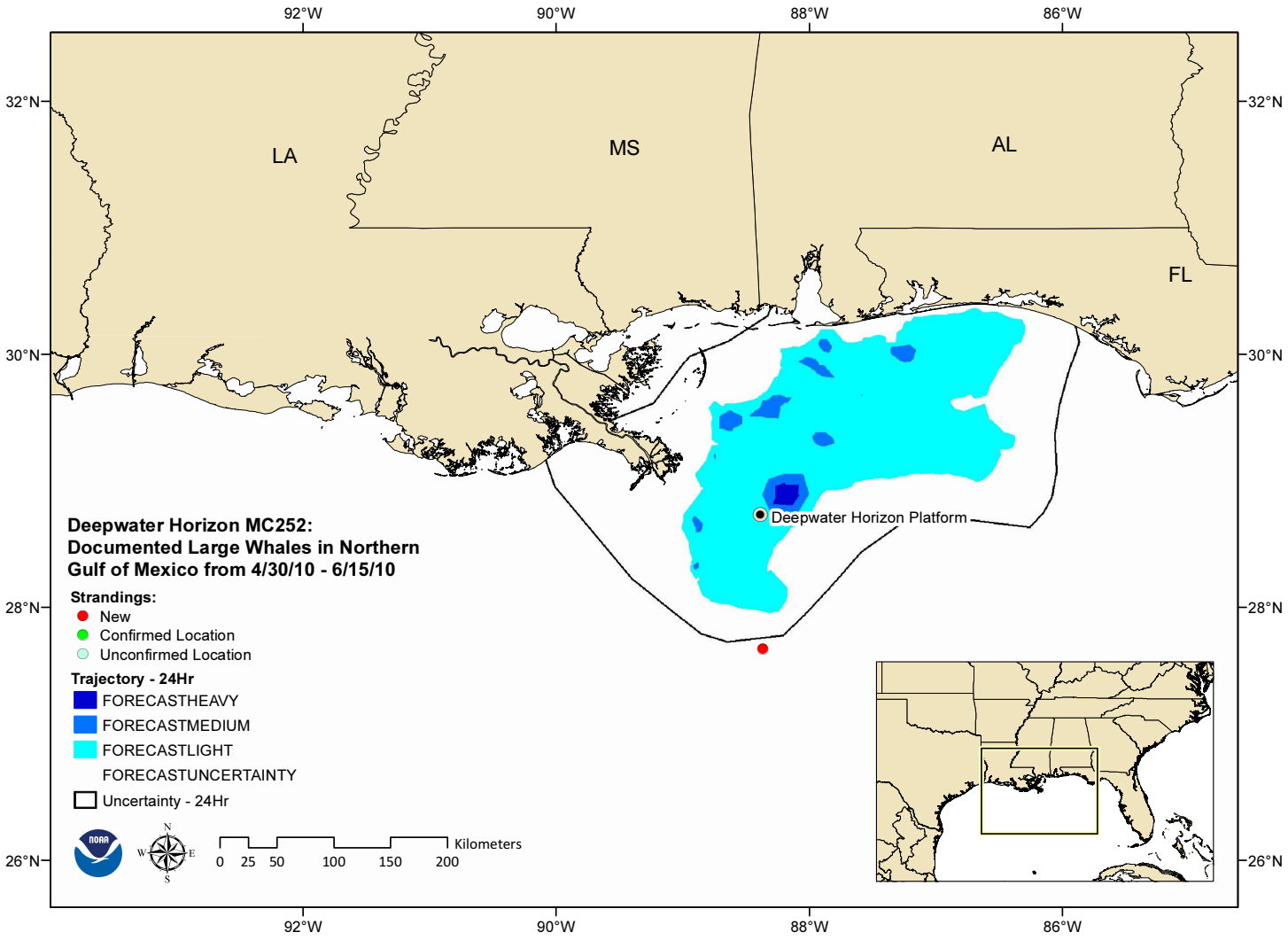

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Documented Large Whales in Northern
Gulf of Mexico from 4/30/10 - 6/15/10
Strandings:
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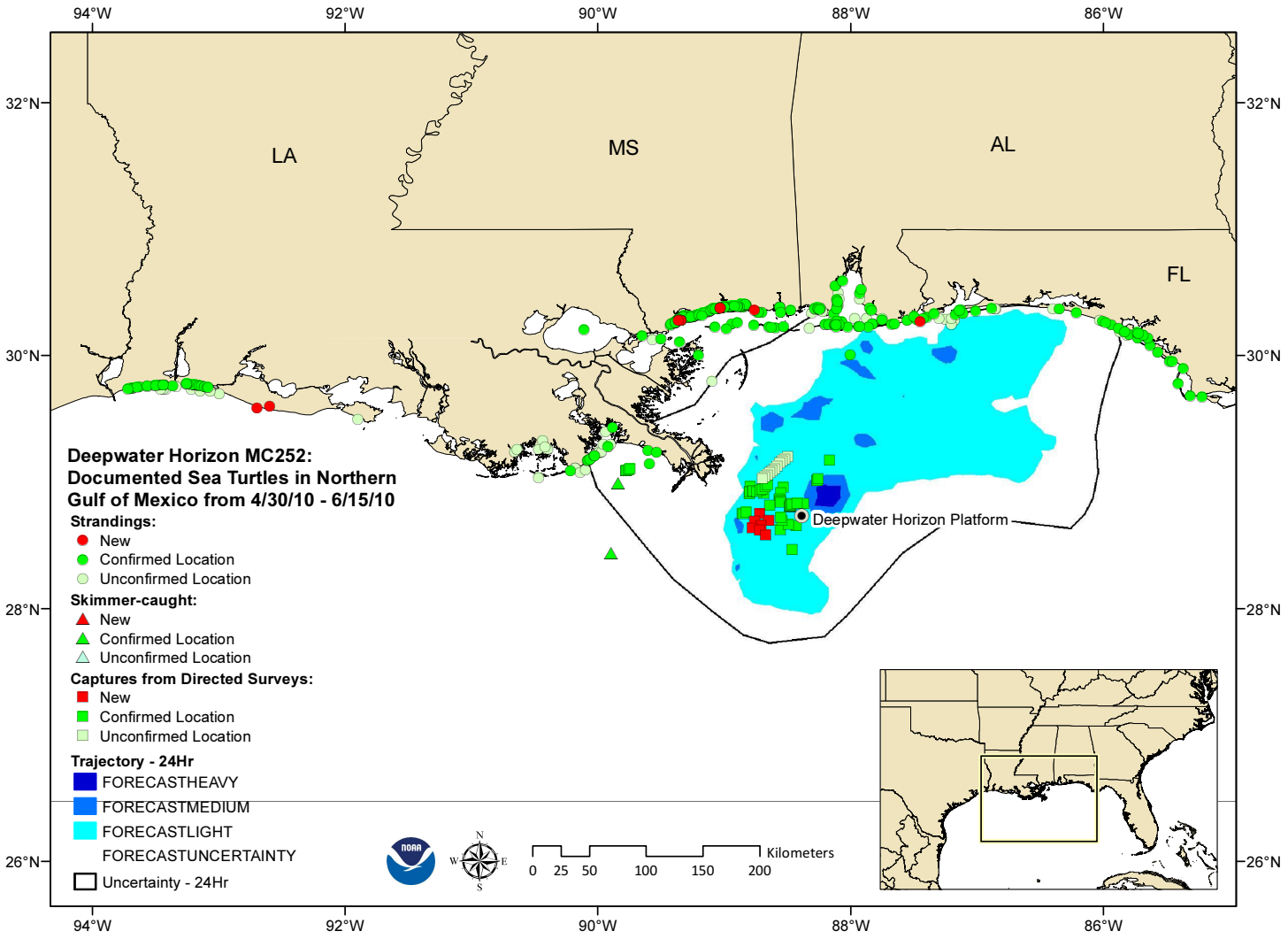

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Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/15/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
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Uncertainty - 24Hr
Deepwater Horizon Platform
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Kilometers



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Strandings:
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Unconfirmed Location
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Confirmed Location
Unconfirmed Location
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Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
0 25 50 100 150 200
Kilometers

Update through June 15, 2010 (as of 1800)

Marine Mammal and Sea Turtle Health and Response

Noteworthy Developments During this Reporting Period

- The NOAA Ship *Pisces* reported a dead 25 ft sperm whale located 150 miles due south of Pascagoula, MS. The whale was decomposed and heavily scavenged by sharks. There was no oil in the vicinity. The whale was photodocumented, sampled (skin/blubber, external swab), and marked with blue paint to reduce resighting/resampling.
- Increase of 12 turtle strandings (1 dead in FL, 1 dead in MS, and 2 dead in LA from June 15; 8 dead reported from previous days)
- Increase of 7 live oiled turtles captured during directed on-water search efforts
- Increase of 2 dolphin strandings (1 dead in MS, 1 dead in AL)
- The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.

Sea Turtles

Total Turtle Numbers

449 total sea turtles verified to date within the "designated spill area" (increase of 19 from June 14 report)

- 383 stranded* (increase of 12 from June 14)
    - 350 of the stranded were found dead (net increase of 12 from June 14)
    - 33 of the stranded were found alive (no change from June 14)
        - 4 recovered alive but died in rehab (no change from June 14)
        - 4 turtles released alive (no change from June 14)
        - 25 live turtles in rehabilitation (no change from June 14)
- 66 turtles collected during directed turtle sampling efforts (increase of 7 from June 14)
    - 60 live turtles in rehabilitation (increase of 7 from June 14)
    - 3 turtles collected dead (no change from June 14)
    - 3 turtles died in rehabilitation (no change from June 14)

* For this event, a true turtle stranding is defined as a turtle that washes ashore dead or debilitated or is found floating dead or debilitated in the course of non-directed turtle surveys. Turtles observed and/or captured during directed sampling efforts are not categorized as strandings.

Turtle Necropsy Status (of the 350 dead stranded, 3 dead directed capture and 7 that died in rehab):

- 7 assessed and unable to perform necropsies (i.e. advance decomposition) (no change from June 14)
- 17 partial necropsies (e.g. due to scavenging or autolysis) (no change from June 14)
- 59 full necropsies performed (no change from June 14)
- 46 carcasses not collected due to decomposition state or unable to recover but marked and/or buried (no change from June 14)

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- 231 carcasses to be necropsied, if decomposition stage warrants (increase of 12 from June 14)
- Of the initial 75 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

Information on Signs of Sea Turtle Oiling:

- To date, visible evidence of oil has been documented externally on 4 dead stranded sea turtle and 5 live stranded turtles (2 of which were caught in skimming operations).
- To date, visible evidence of oil has been documented externally on 63 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

Historical Sea Turtle Strandings:

- The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-15 is 128.
- This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. The breakdown by state for the range of animals historically stranding in the month of June (2005-2009) is as follows:
    - Louisiana: 0-3 stranded sea turtles
    - Mississippi: 0-1 stranded sea turtles
    - Alabama: 0-4 stranded sea turtles
    - Florida panhandle (Escambia – Wakulla Co.): 5-17 stranded sea turtles
- There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.

Marine Mammals

Total Mammal Numbers

45 dolphins have been verified to date within the "designated spill area" (increase of 2 from June 14).

- 43 were dead stranded* dolphins (increase of 2 from June 14)
- 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding (no change from June 14)

1 dead stranded sperm whale has been verified to date within the "designated spill area" (increase of 1 from June 14)

* Under the Marine Mammal Protection Act Section 409.3, a marine mammal stranding is defined as an event in the wild where:

- A marine mammal is dead and is on the beach or shore of the United States or in waters under the jurisdiction of the United States (including any navigable waters); OR
- A marine mammal is alive and is on a beach or shore of the United States and unable to return to the water, on a beach or shore of the United States and, although able to return to the water, is an apparent need of medical attention or in the waters under the

Document ID: 0.7.19.1902.5

jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance.

Dolphin Necropsy Status (of the 43 dead stranded and 2 live stranded dolphins that died or were euthanized):

- 15 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 14)
- 10 partial necropsies performed (e.g. due to scavenging or autolysis) (increase of 2 from June 14)
- 6 full necropsies performed (no change from June 14)
- 11 verified strandings but animals not collected due to stage of decomposition or unable to recover (no change from June 14)
- 3 carcasses to be necropsied, if decomposition stage warrants (no change from June 14)
- Necropsy results are pending for all animals necropsied to date.

Whale Necropsy Status (of the 1 dead stranded):

- 0 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 14)
- 0 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 14)
- 0 full necropsies performed (no change from June 14)
- 1 verified stranding but animal not collected due to stage of decomposition or unable to recover (increase of 1 from June 14)
- 0 carcasses to be necropsied, if decomposition stage warrants (no change from June 14)

Information on Signs of Mammal Oiling:

- Dolphins: Two of the verified dolphins have evidence of external oil on the tongue and/or body and therefore were classified as oiled. However, we are unable at this time to determine whether the animal was externally oiled pre- or post-mortem. All other necropsy findings are pending.
- Whales: The verified whale had no evidence of external oil.

Historical Dolphin Strandings

- The total number of dolphin strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 15 is 14.
- This is higher than the number of marine mammal strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. In part, this may be a reflection of increased detection and reporting and the lingering effects of an earlier observed spike in strandings for the winter of 2010.
- The breakdown by state for the range of animals historically stranding in the month of June (2003-2007) is as follows:
    - Louisiana: 0-5 stranded dolphins
    - Mississippi: 0-1 stranded dolphins
    - Alabama : 0-1 stranded dolphins

Document ID: 0.7.19.1902.5

- Florida panhandle: 0-4 stranded dolphins

Historical Whale Strandings

- The total number of whale strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 15 is 1.
- There are no records of stranded whales in the Gulf of Mexico for the month of June (2003-2007).

Summary of Action Plan Items:

- The directed turtle survey managed by the Marine Mammal/Sea Turtle Unit was on the water today (see results above) and will be on the water again Wednesday June 16.

Document ID: 0.7.19.1902.5

NOAA PA
Daily Media Tracking

NAME OF REPORTER AND MEDIA OUTLET	TELEPHONE NUMBER/ CONTACT VIA EMAIL	QUESTIONS/REQUEST	ACTION TAKEN/ANSWER TO QUESTION (Note who responded)	ROUTINE OR URGENT, IF URGENT EXPLAIN WHY
Hannah Devlin, The Times (London)	[redacted]	Wanted to know more about long-term trajectory modeling	Ewald stated that NOAA produces three-day out trajectory models and that anything beyond 72 hours has a high degree of uncertainty. Referred her to the National Center for Atmospheric Research that has looked months ahead.	Routine
Sam Chu, Minnesota Public Radio		Wanted to know more about a plan to divert the flow of the Mississippi River to help flush out Gulf ecosystems.	Vernon Smith referred reporter to the Army Corps of Engineers.	Routine
Ron Barnett, Greenville News		Wanted to know if oil may reach South Carolina	Doug Helton responded, informed reporter NOAA forecasts don't look beyond 72 hours	Routine
Michelle Cumbo, CNN		Wanted to interview CDR Shep Smith of the NOAA Ship *Thomas Jefferson* for "today's most interesting person" news item	Ewald forwarded to David Hall at OMAO	Routine
Kerry Sanders, NBC		Wanted to join an NGO NRDA trip tomorrow	Ewald forwared downtown.	Routine
Katie Adams, Fox 5 (Wash. DC)		Seeking live 7a.m. on camera interview tomorrow morning with someone from NOAA about oil spill.	Sherman suggested she talk with Scott Smullen.	Routine
Susan Baxter, WWL Radio, New Orleans		Seeking someone to interview concerning how long it will take for fisheries in Gulf to ebound.	Sherman referred her to NOAA Fisheries	Routine
Alan Kovski, BNA Newsletters		Wondering if NOAA's Office of Ocean and Coastal Resource Management woukld be providing the staffing and office space for President's newly announced commision on Gulf Coast Restoration	Sherman indicated it was too early to state at present.	Routine

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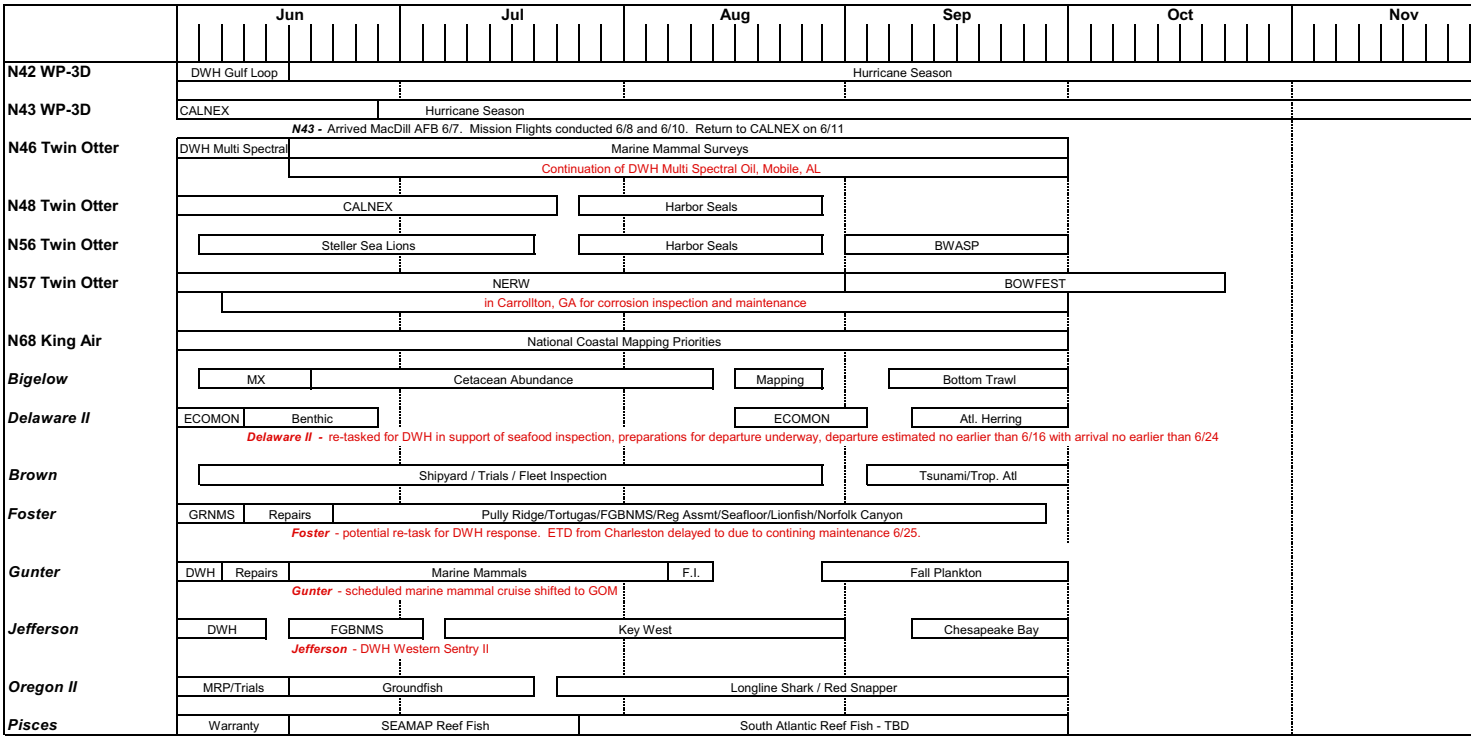
NOAA PA
Daily Media Tracking

NAME OF REPORTER AND MEDIA OUTLET	TELEPHONE NUMBER/ CONTACT VIA EMAIL	QUESTIONS/REQUEST	ACTION TAKEN/ANSWER TO QUESTION (Note who responded)	ROUTINE OR URGENT, IF URGENT EXPLAIN WHY

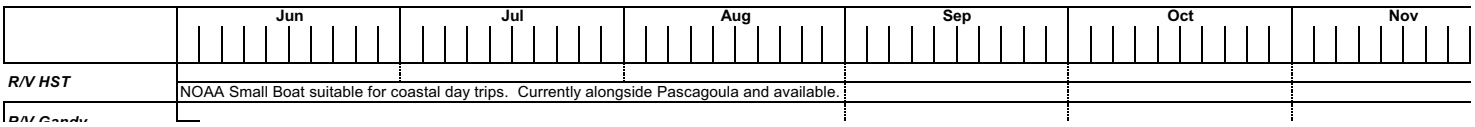
NOAA PA
Daily Media Tracking

NAME OF REPORTER AND MEDIA OUTLET	TELEPHONE NUMBER/ CONTACT VIA EMAIL	QUESTIONS/REQUEST	ACTION TAKEN/ANSWER TO QUESTION (Note who responded)	ROUTINE OR URGENT, IF URGENT EXPLAIN WHY

OMAO Assets (as of 6/16/10)



NOAA Line Office Assets



3/29/2011

Document ID: 0.7.19.1902.7

R/V Gandy	NOAA Small Boat conducting reef fish surveys out of Panama City, FL. Inport Pascagoula with mechanical problems until 6/14			
R/V Caretta	NOAA Small Boat alongside Pascagoula. DHW begin 6/21.			
R/V Harold B	Scheduled to conduct trap/video surveys out of Panama City the reamainder of the month.			

Document ID: 0.7.19.1902.7

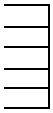
Other Assets

	Jun	Jul	Aug	Sep	Oct	Nov
Beau Rivage	no update					
Brooks McCall	In Port Fourchon, LA, departing 1800 for deep water sampling					
Bunny Bordelon	In Houma, LA					
Capt Hatteras	Deepwater sampling 5+km SE of wellhead on an arc from SE to N					
Endeavor	In port St. Petersburg,FL					
Jack Fitz	Deepwater ROV sampling 2km NW of wellhead. Sampling on an arc toward N with deep and shallow CTD casts.					
Ocean Veritas	Deepwater sampling 7.5km ENE of wellhead on arc toward N					
Pelican	no update					
Rachel Bordelon	In port Houma, LA					
Ryan Chouest	Arriving Theodore, LA					
Walton Smith	Inport Miami, FL					
IOOS Gliders	DWH*					
	Monitoring for oil in Florida coastal waters from Tampa to FL Keys. *No end date specified for gliders.					
NAVO Gliders	Monitoring and sampling oceanographic conditions					

3/29/2011

Document ID: 0.7.19.1902.7

3/29/2011



3/29/2011

3/29/2011

Proposed NOAA Asset DWH Response Schedule

SHIPS				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
Gunter	June 5	June 26	Repairs/ABS inspection scheduled for 6/5-6/14 GU-10-02 Leg 1 - Marine Mammals 06/15 – 06/26	Departed Pascagoula, MS, for DWH Marine Mammal project 6/15
Foster	June 5	June 19	None: NF-10-05, Grays Reef Comparison Cancelled.	Inport Charleston, SC for z-drive repairs and potential DWH response. ETD 6/25.
Thomas Jefferson	June 15	tbd	TJ-10-03 FGBNMS	Departed Galveston, TX, for DWH Western Sentry II in FGBNMS 6/15
Oregon II	June 21	July 5	Rd-10-01 Summer groundfish Leg 2 loses 9 DAS (much of the area typically surveyed during this project is likely going to be off limits due to the oil.)	Could shift to start one day earlier to maintain continuity of DWH mission support by ending Leg 1 of groundfish a day or two early. Ship would have to resupply with water once.
Delaware II	tbd	tbd	DE-10-05 Benthic Habitat	DE plans to depart Woods Hole 18 June for transit to GOM pending final project instructions for seafood sampling mission
Foster	July 5	July 18	NF-10-07 Tortugas Eco Reserve loses all 7 DAS	Allows 2 weeks for z-drive repairs alongside in Pascagoula
Gunter	July 18	August 4	GU-10-02 Marine Mammals, Leg 3 – lose 14 DAS. Currently this project is scheduled for Atlantic Ocean, but there are discussions of moving this effort to the Gulf instead. If project remains in Atlantic, GU isn't an option	GU would have to resupply fresh water one time during this mission period
Pisces	August 5	September 3	PC-10-04 CoOp Reef Fish Survey loses 23 DAS	This 30 day mission would have to be broken into 2 or 3 legs w/ T&Gs for water
Oregon II	September 3	September 28	Rd-10-02, Shark/Snapper Longline loses all of Leg 4 and most of Leg 3. Estimate losss of ~20 DAS. However,	This 26 day mission would have to break into 2 or 3 legs for water and reprovisioning

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			much of the project's survey area is impacted by oil	

Aircraft				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
N42RF WP-3D		June 15	Hurricane Season	Funding ends on June 15. Gulf Loop Current flights could be rescheduled around any tasking for Hurricanes. Hurricane taskings would delay Gulf Loop Current flights by several days
N43RF WP-3D	TBD	TBD	CALNEX (OAR California air quality study)- Potential loss of 1 to 3 days	Reassignment to DWH for air quality study per OAR request. Arrived MacDill 6/7. Mission Flights conducted 6/8 and 6/10. Returned to CALNEX 6/11.
N46RF Twin Otter	April	September 30	Alaska Marine Mammal Surveys	Extending Multi Spectral Oil Analysis flights beyond June 15 will impact Alaska Marine Mammal surveys. Additionally, engine overhaul date will be accelerated due to increased utilization and installation of extended range fuel tank will be delayed.
N57RF Twin Otter	June 7	September 30	Northeast Right Whale / BOWFEST	DWH Marine Mammal flights tasking resumed June 7. Anticipated schedule is approximately 5 flights every 14 days. Tasking could be flown on Twin Otter N46RF but belly port will be unavailable for use. Additional crew would be required for N46F due to crew duty day limitations.
N68RF King Air	April	September 30	National Coastal Mapping Priorities	Risk of not meeting GPRA goals for shoreline mapping.

NOAA NRDA Activities Report - June 16, 2010

(Reporting Activities from June 15, 2010)

1. Technical Working Group Updates

Shoreline: Forensic oil sampling occurred in West-South Terrebonne Bay and West-Northwest Terrebonne. Four teams went out in the field to complete pre-assessment shoreline surveys at Pelican Island, Laneaux Island, Bastion Bay, Bay Baptiste, Whiskey Island and Point Chenier/Bay Island. Team summaries below:

Team 1 Shoreline pre-assessment from Myrtle Grove to Wilkinson Bay near Saint Mary's Point. Vegetation oiled within areas without previous SCAT data and with previous SCAT data; condition varied between no visible vegetation oiling to a solid band of oil several feet into the marsh. Oiling within the water was predominately silver sheen with some sheening from oiled vegetation.

Team 2 No report

Team 3 Assessed shoreline of Whiskey Island. Waypoint and tracklog data, photographs and data sheets were collected from 7 (070-076) waypoints during the day's field effort. Waypoints were collected starting near the center and collecting points toward the easternmost limits of SCAT oil mapping data in the area. We finished by progressing in a westward direction back toward the center of Whiskey Island. SCAT data listed the entire shoreline as lightly oiled; however, surveys found the oiling to be very lightly with scattered tar balls. Team 3 reported in to NOAA Command Center before departing from the ramp, at mid-day and again upon returning to the boat ramp at 1415. There were no interactions or problems during the field effort.

Team 4 –assessed the northern and south eastern portions of the Bassa Bassa (Saturday Island). Areas with direct exposure to the Gulf of Mexico (southeast side) tended to have more oiling. Protected shorelines (northern) tended to have less oiling. The northern side of the island was shown on the SCAT maps to be 'No Oil' (blue) but we found light oil consistently along this marsh. On the Gulf side (SE side) with the direct exposure, the SCAT maps showed the shore to be very lightly oiled. The team found this to be moderate at the northern end, and light to moderate along the middle to southern end.

Sample Intake Teams – Samples processed at shoreline as of 6/15/10:

Chain of Custody data packages processed: 265
Number of Bottles Received: 3158

Chemistry: As of June 15th, approximately 4600 samples have been collected to support NRDA baseline and pre-assessment data collection. This total consists of approximately 70% water samples, 20% sediment samples, and 5% or less of tissue, oil (*tarballs*), oil on water product, and dispersant.

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Water Column: NRDA sampling activities are ongoing aboard 2 vessels.

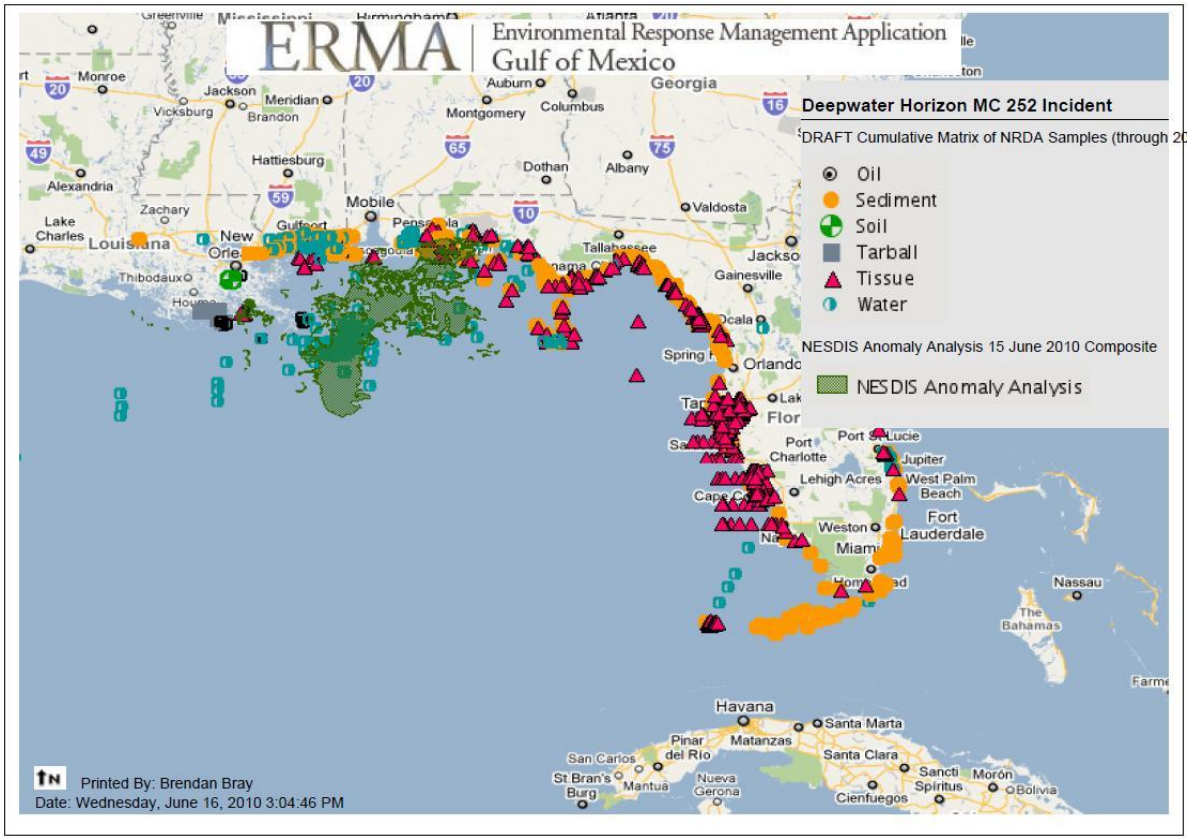
NRDA sampling activities are ongoing aboard two vessels:

- **Brooks McCall:** Conducting deep water sampling 2.5 km northwest of wellhead, moving southwest.
- **Jack Fitz:** Returned to port due to mechanical problems on 6/14. Scheduled to depart again on 6/17
- **Ocean Veritas:** Deep water sampling 5km W of wellhead. Altering plans to 2km SW of wellhead if no signals.
- **Thomas Jefferson:** Scheduled to depart today. May rendezvous with Jack Fitz on 6/19 for combined survey operations. Awaiting final decision on rendezvous plan.

Human Use: Conducted boat ramp counts at 4 ramps in Central FL, 1 in FL Keys, 3 in Western FL, 4 in LA. Shore counts and intercepts in AL.

SAV: Currently identifying long-term sampling dates and sites for injury assessment phase.

Marine Mammals/Turtles: Marine Mammal survey team aboard Gordon Gunter is underway on a sperm whale preassessment survey.



Environmental Response Management Application _Sampling Overview_06-16-2010

Document ID: 0.7.19.1902.9

Received(Date): Thu, 17 Jun 2010 12:38:08 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: [Fwd: Re: sea food safety]
To: John Rapp <John.Rapp@noaa.gov>
Re: sea food safety.eml

Received(Date): Thu, 17 Jun 2010 12:32:25 -0400
From: Eric Schwaab <Eric.Schwaab@noaa.gov>
Subject: Re: sea food safety
To: "'David.Kennedy@noaa.gov'" <David.Kennedy@noaa.gov>
Cc: "'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'gloria.thompson@noaa.gov'" <Gloria.Thompson@noaa.gov>

Sure. Thanks.

----- Original Message -----
From: David.Kennedy@noaa.gov <David.Kennedy@noaa.gov>
To: Eric Schwaab <Eric.Schwaab@noaa.gov>
Cc: John Oliver <John.Oliver@noaa.gov>
Sent: Thu Jun 17 12:27:00 2010
Subject: Re: sea food safety

wanted to see if you wanted to invite matt thorburn - war room rep - in on =
this call?
----- Original Message -----
From: Eric Schwaab <Eric.Schwaab@noaa.gov>
Date: Wednesday, June 16, 2010 6:45 pm
Subject: Re: sea food safety
To: David Kennedy <David.Kennedy@noaa.gov>
Cc: John Oliver <John.Oliver@noaa.gov>, Steve Murawski <Steve.Murawski@noaa=
gov>, Jen Pizza <Jen.Pizza@noaa.gov>

> Dave - thanks. I understand. I will ask Gloria to coordinate
> schedules
> for a call tomorrow.
>
> Let me suggest that we think about we we are and where we are heading
>
> by component parts. My concern is that we never complete a
> conversation about strategy without jumping to implementation,
> communications or any of a range of elements of the response. So I
> suggest we structure conversation around:
>
> 1) Strategy - is a closure based first line of defense the right role
>
> for NOAA? Do we have the right baseline, perimeter and dockside
> sampling to ensure that the closure is effective? Where do
> dispersants
> fit into the seafood safety approach, etc.?
>
> 2) Implementation Plan - Do we have the right sampling plan, at the
> right scale / volume, targeted to the right places? And are we
> processing samples the right way, etc.?
>
> 3) Management of the process - Are we implementing the plan - do we
> have the right people with the right skill set in place, boats, money
> to
> support them, facilities, and a rotational approach to sustain the
> process over time?
>
> 4) Communications - internally and externally - are we communicating
>
> effectively what we are doing? How can we do it better?

>
> 5) Evaluation / Adaptive Management - the sampling effort has shifted
>
> already due to changing conditions. It will shift again. We should
> not
> be afraid to communicate that and react accordingly.
>
>
> Hope this helps. Thanks.
>
>
> David Kennedy wrote:
> > We have to have a meeting to discuss the way ahead. Eric, you heard
>
> > the discussion today. Not only is commerce upset by not having the
>
> > full story and plans but Jane expressed her concern about lack of
> long
> > term plans, capacity and dispersant testing before we even got to
> > living marine resources, turtles and outside experts being brought
> in
> > to analyze sampling protocols and length of time to get them done.
> > After the meeting I talked with Margaret about this and other issues
>
> > related to structure and my role. She made it clear that I was
> > supposed to be in charge of the issue team boxes and that it was up
> to
> > me to make things happen there. Have not felt like I was given that
>
> > authority but she made it clear that is what she expects. So..., as
> I
> > have said before, I am in this with you guys on both living marine
> > resources, science and the other boxes and we have to find a way
> ahead
> > quickly or at least make sure that if we have the right answers they
>
> > are being communicated better. Am available through from around 10
> to
> > 3 tomorrow so tell me who and how we talk about way ahead. dmk

Received(Date): Thu, 17 Jun 2010 18:27:06 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: High Level Talkers
To: Dave.Westerholm@noaa.gov, Scott.Smullen@noaa.gov
Cc: Brian Pawlak <Brian.T.Pawlak@noaa.gov>, Mike Weaver <Mike.Weaver@noaa.gov>,Matthew Thorburn <Matthew.Thorburn@noaa.gov>,Heather Blough <Heather.Blough@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Andrew Winer <Andrew.Winer@noaa.gov>, Russell Dunn <Russell.Dunn@noaa.gov>,Gloria Thompson <Gloria.Thompson@noaa.gov>,Roy Crabtree <Roy.Crabtree@noaa.gov>, dwh.staff@noaa.gov

Scott~

Can you please forward the most up to date high level talkers that comms has for use by Roy Crabtree, who is with Senator Shelby in the Gulf.

Thanks

Dave.Westerholm@noaa.gov wrote:

> Brian
> I'm at Mobile IC right now and don't have access
> Mike is no longer the icc contact ..it is Chris moore now
> I've copied dwh staff who can get you the info.
> Dave

> **From:** Brian Pawlak <Brian.T.Pawlak@noaa.gov>
> **Date:** Thu, 17 Jun 2010 17:32:45 -0400
> **To:** Dave.Westerholm<Dave.Westerholm@noaa.gov>; Mike Weaver<Mike.Weaver@noaa.gov>; Matthew Thorburn<Matthew.Thorburn@noaa.gov>; Heather Blough<Heather.Blough@noaa.gov>
> **Cc:** John Oliver<John.Oliver@noaa.gov>; Andrew Winer<Andrew.Winer@noaa.gov>; Russell Dunn<Russell.Dunn@noaa.gov>; Gloria Thompson<Gloria.Thompson@noaa.gov>; Roy Crabtree<Roy.Crabtree@noaa.gov>
> **Subject:** Facts for Shelby Constituent Meetings for Roy Crabtree
>
> Mike/Dave
>
> Can you all send high level talkers as you did last week to Roy/Heather ASAP Roy Crabtree, Southeast Regional Administrator for NMFS. He is accompanying Senator Shelby through the Gulf.
>
> Brian Pawlak wrote:
>
> > Thanks all...Russ has what he needs.
> >
> > Dave.Westerholm wrote:
> >
> > > John,

No problem but I will be doing an oil spill presentation at CHOW then doing hearing prep so I'm forwarding this to the dwh staff and Mike Weaver (ICC). Most of the initial information is available from our reports (ICC, NIC, your LMR report, etc.) but a few of the questions may be hard to answer.
v/r
Dave

John Oliver wrote:

> Dave & Andy -- as you know Russ Dunn will be with the Secretary tomorrow & Friday and will need lots if support & information. See his initial thoughts below. I will have Brian Pawlak reach out to you Dave to figure out what info and how to feed it to Russ today as background and then real time updates while he is with the Secretary. jo
>
> Russell Dunn wrote:
>
> > Brian:
> >
> > Per my telephone message, as you are spill guru, I would seem that the tasking of this falls to you. I have been asked to accompany Sec. Locke and represent NOAA in a series of constituent meetings with tomorrow in Mobile, Biloxi, and New Orleans. As such, I have a number of relevant NMFS and NOAA related questions for which I need our best available answers before COB today:

- What is the official estimate of total spill volume to date?
- What is the official estimate of current oil flow rate?
- What were the pertinent outcomes/salient points for the public with regard to the dispersant science meeting held in late May? or the first week of June? Did any practices change as a result of that meeting?
- How many NOAA ships and water vessels are actively engaged (or en route) to the spill?
- How many NOAA aircraft have been involved in the spill and what are the aggregate flight hours (from all types of aircraft)?
- How many NOAA staff are deployed in the GOM and working on the spill?
- Approximatel

y how many NOAA staff are engaged on the spill nationwide?

- How many seafood samples have been fully processed and what have the results been (the first samples arrived at the labs on May 20-21)? If the answer is we have no results yet, when will we have results?
- What monies, aside from additional funding for increased sampling in the For-hire Survey has NOAA provided to states, affected industries, or individuals?
- What is the status of Congressional appropriations related the fishery disaster declaration?
- What are the official estimates of marine mammal strandings and of what species?
- What are the official estimates of sea turtles strandings and

of what species?

- How many acres of marsh habitat are estimated to have been impacted by oil to date?
- What declines in commercial fishing effort/landings have been seen relative to the same period last year? (one or two concrete examples)
- What declines in recreational effort/landings have been seen relative to the same period last year? (one or two concrete examples)
- Is there a master list of State agencies and academic institutions with whom NOAA is collaborating on the BP oil spill response?

Thanks.

RBD

--
Russell Dunn
National Policy
Advisor for
Recreational
Fisheries
Office of the

Assistant
Administrator
NOAA Fisheries
Tel. B6 Privacy
B6 Privacy

--
Brian Pawlak
Deputy Director
NOAA Fisheries Service
Office of Habitat Conservation
B6 Privacy (167)
B6 Privacy (Fax)

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--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: B6 Privacy
b7c per B6 Privacy
fax: B6 Privacy

Received(Date): Fri, 18 Jun 2010 15:02:53 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update from June 17

Gulf of Mexico Oil Spill Response Update

06/17/2010

BP is working as part of the Unified Command to accomplish three main objectives in the Gulf of Mexico:

1. Offshore - to stop the flow of oil on the sea floor;

2. Offshore – to minimize impacts of the spill on the surface; and

3. Onshore to protect and cleanup the shoreline, inform the public, and compensate impacted people.

Highlights

- 14,752 barrels of oil captured by the LMRP Cap on June 16. Approximately 179,000 barrels have been collected to date.

- Q4000 drilling platform connected to valves on blowout preventer – captured and flared 3,475 barrels of oil on June 16.

- 240,000 feet of containment and sorbent boom deployed yesterday.

- BP creates a $20 billion fund dedicated to claims and response costs.

- $90 million paid in claims as of close of business on June 16 – see State Summaries.

- BP Interactive Mapping Tool at: http://www.gulfofmexicoresponsemap.com.

Offshore – Sea Floor

BP's priority is to contain the oil spill and complete relief wells to kill the flow.

Containment Recovery

ξ Lower Marine Riser Package (LMRP) Cap – 14,752 barrels of oil were captured through the LMRP cap during the past 24-hour period. Total recovery from the LMRP Cap is 197,351 barrels to date. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* The gas is being flared. 33.2 million cubic feet were burned on June 16.

ξ Q4000 Direct Connect to Blowout Preventer – Yesterday, a second recovery system was placed in service which is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. The Q4000 flared 3,475 barrels of oil and 6.8 million cubic feet of gas on June 16. That flow rate will be increased over the next few days.

ξ Permanent Riser Systems – BP is bringing in two additional ships that will be connected to "permanent riser systems." These systems will be capable of quick disconnect/reconnect in the event of a hurricane. The first riser has been fabricated and is being installed. The second riser is in the design stage. More information can be found under "Technical Update" on BP's website at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033572&contentId=7061710

-

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, with approximately 9,152 gallons applied on June 16. EPA is allowing subsea application of the currently-used dispersant to continue.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

ξ The first relief well (work being performed by the *Development Driller III*) is at 15,936 feet below sea level. This well was "spudded" on May 2.

ξ The second relief well (work being performed by *Development Driller II*) is at

approximately 9,970 feet below sea level. Drilling began on May 16.

Offshore – Surface Response

Skimming Vessels – 447 skimmers designed to separate oil from water are deployed across the Gulf. Approximately 521,585 barrels of oil-water mix have been recovered and treated, including 16,995 barrels in the last 24 hours.

Surface Dispersant – 13,593 gallons of dispersant were applied on the surface yesterday.

In-Situ Burning – 10 burns were conducted in the last 24-hour period. 124,012 total barrels are estimated to have been consumed through burns.

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented based on the type of impact or location and trajectory of the spill. Monitoring and sampling programs are being conducted for:

- air quality
- water quality
- water column sampling
- submerged oil, and
- worker health.

Sampling data can be found at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill. The tool integrates the latest data on the oil spill's

trajectory, fishery closed areas, wildlife and place-based Gulf Coast resources, locations of oiled shoreline and other data points. The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com. The U.S. Government has also created a mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products –

ξ BP is receiving approximately 5,000 suggestions per day on innovative ways to stop the flow of oil or contain the oil spill. Our team of engineers is reviewing these as quickly as possible. To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.

ξ The U.S. Government has also issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That announcement can be found online at: https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore – Shoreline Protection and Funding

Boom Update –More than 2.5 million feet of containment boom is deployed or assigned across the Gulf with 639,000 feet in staging areas. 3.6 million feet of sorbent boom is deployed with more than 1.9 million feet in staging areas. More than 240,000 feet of containment and sorbent boom was deployed on June 16.

Alabama

ξ Boom – 527,600 feet of containment boom deployed and 128,825 feet staged.

ξ Activated Vessels – 485 official response vessels, 850 Vessels of Opportunity, 74 skimmers, 84 barges.

ξ Shoreline Impacts – More than 1,200 people working on clean up at Dauphin

Island, and nearly 950 people working to clean up locations from Ft. Morgan to Perdido Pass. Vacuum trucks are being used at Perdido Bay and sand cleaning machines are being used at Ft. Morgan.

Florida

ξ Boom – 308,600 feet of containment boom deployed and 56,050 feet staged.

ξ Activated Vessels – 218 official response vessels, 568 Vessels of Opportunity, 110 skimmers, 22 barges.

ξ Shoreline Impacts – More than 1,360 people working to clean up oiling in Escambia, Okaloosa, Walton, Bay and Gulf counties.

Louisiana

ξ Boom – 1,399,208 feet of containment boom deployed or assigned. 277,561 feet of boom staged.

ξ Activated Vessels – 1,372 official response vessels, 679 Vessels of Opportunity, 150 skimmers, 380 barges.

ξ Shoreline Impacts – 1,830 people are working to clean up oil at locations in St. Bernard, Plaquemines, Jefferson, Lafourche and Terrebonne parishes.

Mississippi

ξ Boom – 369,200 feet of containment boom deployed. 26,835 feet of boom is staged.

ξ Activated Vessels – 431 official response vessels, 833 Vessels of Opportunity, 96 skimmers, 69 barges.

ξ Shoreline Impacts – More than 540 people working on cleanup at Horn Island and Petit Bois Island.

Volunteers and Training – 25,519 volunteers are signed up, trained, and working as of June 14. Volunteers are being trained in five different modules that range from safety for beach clean-up, to wildlife monitoring, handling of hazardous materials and vessel

operation for laying boom. Information about training can be found at www.deepwaterhorizonresponse.com under "volunteers."

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

Onshore – Claims

BP to Create a $20 billion Claims Fund – on Wednesday, BP met with the President of the United States and reached agreement on creation of a $20 billion fund to cover legitimate business and loss of income claims, natural resource damages, and state and local response costs for the spill. Claimants will have access to an Independent Claims Facility administered by a neutral third-party to ensure fairness. More detail about the establishment and operation of the claims fund is available on BP's website at: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7062966

Filing Claims – The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: www.bp.com/claims. *Note: No person asserting a claim or receiving payment for interim benefits will be asked or required to sign a release or waive any rights to assert additional claims, to file an individual legal action, or to participate in other legal actions associated with the Deepwater Horizon incident.*

State-by-State Claims Summary as of June 17

Alabama Counties	Claims Paid
Mobile	$10,716,909
Baldwin	$4,053,668
Monroe	$83,000
Covington	$55,000

Montgomery	$51,100
Clarke	$50,500
Jefferson	$36,032
Tuscaloosa	$30,438
Escambia	$27,715
Wilcox	$23,500
Dale	$22,462
Chilton	$20,000
Marengo	$18,000
Madison	$17,009
Walker	$15,000
Greene	$14,350
Saint Clair	$11,245
Washington	$11,035
Other Counties	$372,279
Alabama Total	$15,564,726

Florida Counties	Claims Paid
Franklin	$2,861,781
Escambia	$2,484,486
Okaloosa	$2,230,080
Bay	$1,877,937
Santa Rosa	$1,058,595
Wakulla	$550,346
Gulf	$427,772
Walton	$265,256
Orange	$112,300
Duval	$95,541
Pasco	$91,000
Liberty	$52,300
Pinellas	$44,847
Leon	$43,700
Hillsborough	$40,720
Washington	$32,500
Calhoun	$21,075
Citrus	$17,500
Jackson	$17,500
Lake	$15,000
Other Counties	$309,035
Florida Total	$12,649,271

Louisiana Parishes	Claims Paid
Terrebonne	$9,231,788

Jefferson	$9,022,051
Plaquemines	$8,559,413
Lafourche	$5,905,338
Saint Bernard	$3,979,888
Orleans	$2,293,999
Saint Tammany	$2,107,560
Vermilion	$1,515,627
Saint Charles	$1,006,072
Iberia	$838,622
Calcasieu	$687,200
Saint Mary	$684,500
Cameron	$570,150
Lafayette	$405,388
Tangipahoa	$360,018
East Baton Rouge	$240,754
Livingston	$192,925
St John the Baptist	$134,950
Assumption	$89,000
Saint Martin	$85,300
Washington	$80,200
Jefferson Davis	$80,000
Saint Landry	$71,934
Ascension	$65,900
Saint James	$50,000
Beauregard	$49,500
Pointe Coupee	$47,400
Acadia	$25,350
Ouachita	$25,000
Avoyelles	$23,900
West Baton Rouge	$23,000
Other Parishes	$877,731
Louisiana Total	$49,330,456

Mississippi Counties	Claims Paid
Harrison	$4,791,148
Jackson	$2,347,722
Hancock	$1,531,067
Pearl River	$158,800
Stone	$153,264
George	$98,992
Lamar	$92,000
Pike	$29,300
Forrest	$25,000
Marion	$20,000
Lawrence	$15,000

Jones	$15,000
Madison	$14,300
Lincoln	$12,500
Hinds	$11,000
Neshoba	$11,000
Webster	$10,000
Other Counties	$214,850
Mississippi Total	$9,550,942

Other States	$2,742,011
Total Claims Paid	$89,837,407

Claims Offices – 32 Claims offices are open across the Gulf Coast to provide locations where people can go to file or discuss claims. There are more than 170 operators answering phones, and 667 claims adjusters are staffing the offices.

Louisiana (14 locations) –

- Belle Chasse/Gretna

2766 Belle Chasse Hwy

Belle Chasse, LA 70037

- Chauvin (Terrebonne Parish)

5703 Hwy 56

Chauvin, LA 70344

- Cut Off (Lafourche Parish)

Tarpon Heights Shopping Center

Unit 2

16263 E. Main Street

Cut Off, LA 70345

- Grand Isle (Jefferson Parish)

3811 LA 1 (Community Center)

Grand Isle, LA 70358

- Houma (Terrebonne Parish)

Plaza Caillou Shopping Center

814 Grand Caillou Road

Suite 2 & 3

Houma, LA 70363

- Lafitte (Jefferson Parish)

2654 Jean Lafitte Blvd

Town Hall

Lafitte, LA 70067

- Morgan City (St. Mary Parish)

931 US Hwy 90 East

Bayou Vista, LA 70380

- New Orleans East (Orleans Parish)

4375 Michoud Blvd

New Orleans, LA 70461

ξ New Orleans East (Orleans Parish) – BP Office

4655 Michoud Blvd., Suite D6 (first floor)

New Orleans, LA 70461

ξ New Iberia (Iberia Parish)

956 S. Lewis Street

New Iberia, LA 70560

ξ Slidell (St. Tammany Parish)

2040 Gause Blvd., Suite 10

Slidell, LA 70461

ξ St. Bernard (St. Bernard Parish)

1345 Bayou Rd

Saint Bernard, LA 70085

ξ Venice/Boothville (Plaquemines Parish)

41093 Hwy LA 23

Boothville, LA 70038

ξ Westwego (Jefferson Parish)

1280 Westbank Expressway

Westwego, LA 77094

Mississippi (3 locations) –

ξ Bay St. Louis (Hancock County)

1171 Highway 90

Bay St. Louis, MS 39520

ξ Biloxi

920 Cedar Lake Rd, Suite K

Biloxi, MS 39532

ξ Pascagoula

5912 Old Mobile Hwy

Suite 3

Pascagoula, MS 39581

Alabama (5 locations) –

ξ Bayou LaBatre

13290 N. Wintzell Avenue

Bayou LaBatre, AL 36509

ξ Dauphin Island (Mobile County)

1008 Alabama Avenue

Dauphin Island, AL 36528

- Foley (Orange Beach/Gulf Shores/Bon Secour)

1506 North McKenzie Street (HWY 59)

Suite 104

Foley, AL 36535

- Gulf Shores / Orange Beach (Baldwin County)

24039 Perdido Beach Blvd

Suite 1

Orange Beach, AL 36561

- Mobile (Mobile County)

325 East I-65 Service Rd S

Suite 1

Mobile, AL 36606

Florida (10 locations) –

- Apalachicola (Franklin County)

194 14th Street

Suite 105

Apalachicola, FL 32320

- Crawfordville (Wakulla County)

3010 Crawfordville Hwy

Suite A&B

Crawfordville, FL 32327

- Ft. Walton Beach (Okaloosa County)

348 SW Miracle Strip Pkwy

Suite 13

Fort Walton Beach, FL 32548

- Gulf Breeze (Santa Rosa County)

5668 Gulf Breeze Pkwy

Unit B-9

Gulf Breeze, FL 32563

- Marathon (Monroe County)

7885 Overseas Hwy

Marathon, FL 33050

- Panama City (Bay County)

7938 Front Beach Road

Panama City Beach, FL 32408

ξ Pensacola (Escambia County)

3960 Navy Boulevard

Suite 16-17

Pensacola, FL 32507

ξ Port St. Joe (Gulf County)

106 Trade Circle

Suite A

Port St. Joe, FL 32456

ξ Key West (Monroe County)

3706 N. Roosevelt Blvd

Suite H

Key West, FL 33040

ξ Santa Rosa Beach (Walton County)

5008 US Hwy 98W

Unit 6&7

Santa Rosa Beach, FL 32459

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or	(281) 366-5511

submit information on alternative response technology, services, products or suggestions	
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	

Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

Received(Date): Fri, 18 Jun 2010 10:27:42 -0400
From: "Griffis, Kevin" <KGriffis@doc.gov>
Subject: FW: pah standards background
To: "Rapp, John" <John.Rapp@noaa.gov>
Cc: "Kenney, Justin" <Justin.kenney@noaa.gov>,"Sarri, Kristen" <KSarri@doc.gov>, "Gilson, Shannon" <SGilson@doc.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>
PastedGraphic-2.tiff
ATT00001.htm
963_seafood2-oil.pdf
ATT00002.htm

These questions are more timely and for a story that Andrew Schneider from AOL News is writing over the weekend. He spoke with Walt Dickhoff at the Seattle lab, and while overall the interview was fine, there was one very concerning thing that Walt said. According to Walt, the Seattle lab hasn't received a fish sample from the Gulf for testing since the first batch arrived in April/May.

Please see the reporter's question below.

I assume the answer to question 1 is they are FDA standards that are included in the 2002 NOAA document 963 – "Managing Seafood Safety After an Oil Spill."

For question 2, we do the testing, but it is FDA that makes the determination as to safety, right? How do we get them the info? What is the process?

Question 3: Have we sent samples to the Seattle lab subsequent to what was sent/collected in April/May? If not, why not? Did we send it to another lab? Does Pascagoula do chemical testing too?

You can see where this is going. If we don't have any test results from fish taken after May, even though the closures may be the first and best line of defense, that points to what reporters would think would be a pretty significant hole in our seafood safety regimen.

From: [redacted] *B6 Privacy*
Sent: Friday, June 18, 2010 1:35 AM
To: Griffis, Kevin
Subject: Re: pah standards background

So everyone (FDA, EPA, etc) is using (2002) NOAA-established standards for seafood? Correct sir?

Walt told me today that the results his people obtained on the samples were sent back to headquarters where their safety would be determined "further up the food chain." Who does that please? And, when please?

The only other (and final) point you were trying to pin down for me is NOAA collected more samples for chemical analysis? If so, how often?

Nothing has arrived at the Seattle lab since the first batch collected in April and May.

Have a great weekend,

a

Andrew Schneider



Document ID: 0.7.19.1897.1

Senior Public Health Correspondent
P - [redacted]
F - [redacted]
E - [redacted]
W - www.aolnews.com

On Jun 17, 2010, at 2:31 PM, Griffis, Kevin wrote:

> Andrew, here are the answers to the questions you asked yesterday.
>
> Background: Levels for hydrocarbon contamination in seafood were set after multi-agency discussions in which a post-Exxon Valdez FDA advisory opinion was used as a guide."
>
> I've attached the NOAA study "Managing Seafood Safety after an Oil Spill," which references the FDA study mentioned above. Let me know what else you need.
>
> Kevin Griffis
> Director of Public Affairs
> U.S. Department of Commerce
> 1401 Constitution Ave. NW
> Washington, D.C. 20230
> (o) [redacted]

Managing Seafood Safety after an Oil Spill



Courtesy of PhotoDisc

Ruth Yender
Office of Response and Restoration
National Oceanic and Atmospheric Administration
Seattle, Washington

Jacqueline Michel and Christine Lord
Research Planning, Inc.
Columbia, South Carolina

National Oceanic and Atmospheric Administration • NOAA's National Ocean Service • Office of Response and Restoration

Document ID: 0.7.19.1897.3

Managing Seafood Safety after an Oil Spill

Ruth Yender
Office of Response and Restoration
National Oceanic and Atmospheric Administration
Seattle, Washington

Jacqueline Michel and Christine Lord
Research Planning, Inc.
Columbia, South Carolina

National Oceanic and Atmospheric Administration • NOAA's National Ocean Service • Office of Response and Restoration

November 2002

Document ID: 0.7.19.1897.3

FOR INFORMATION OR COPIES OF THIS DOCUMENT, PLEASE CONTACT:
ruth.yender@noaa.gov

PLEASE CITE AS:
Yender, R., J. Michel, and C. Lord. 2002. Managing Seafood Safety after an Oil Spill. Seattle: Hazardous Materials Response Division, Office of Response and Restoration, National Oceanic and Atmospheric Administration. 72 pp.

Document ID: 0.7.19.1897.3

Table of Contents

I. **Introduction and Background** 1
Decision Process for Managing Seafood Safety 2
Seafood Safety Management Authority 4

II. **Assessing the Likelihood of Seafood Exposure and Contamination 6**
Oil Types and Properties 6
Oil Fate and Pathways of Exposure 11
Early weathering processes that change oil properties 11
Long-term weathering processes that change oil properties 15
Weathering processes that change the location of the oil 15
Seafood Contamination Terminology 17
Biological and Ecological Factors Affecting PAH Contamination of Seafood 18
Summary of Literature on Uptake and Elimination 23
Correlation between Taint and Body Burden 26
Conceptual Models of Exposure, Uptake, and Elimination 26

III. **Monitoring Seafood for Contamination 29**
Developing Seafood Sampling Plans 29
Selecting sampling locations 29
Selecting target species to be sampled 30
Sampling frequency and duration 30
Sample collection and handling 30
Testing Seafood for Contamination and Tainting 31
Sensory evaluation of seafood for presence of petroleum taint 31
Chemical testing techniques for petroleum contaminants in seafood 33
Water Monitoring 36
Sediment Monitoring 37

IV. **Seafood Risk Assessment 38**
Overview of Cancer Risk Calculations for PAHs in Seafood 38
Seafood Advisory and Action Levels from Previous U.S. Oil Spills 40
The Equivalency Approach for Risk Assessment 41
BaP equivalency approach for PAH contamination 41
Equivalency calculations 42
Human Consumption Rate Assumptions 43
Consumption estimates for consumers of commercially harvested seafood 43
Consumption estimates for consumers of seafood harvested recreationally or for subsistence use 44
Consumption estimates for other potentially at-risk groups 46

V. **Risk Communication 47**
General Considerations 47
General recommendations for risk communication during oil spills 47
Lessons Learned from Previous Oil Spills 48
Communicating Relative Risks 51

VI. **Literature Cited 53**

VII. **Glossary of Terms 60**

Appendix 64

Document ID: 0.7.19.1897.3

Figures

I-1. Decision process for managing seafood safety after an oil spill 3

II-1. Pattern of PAH distribution for different oil types. 9
II-2. Plots of predicted evaporation and dispersion representative of four oil types 12

V-1 Commercial shellfish harvest closure notice issued during the *New Carissa* oil spill 50
V-2. Shellfishing closure notice issued during the *New Carissa* oil spill 51

Tables

I-1. Recent oil spills where seafood monitoring was conducted 5

II-1. Components in oil and selected characteristics 6
II-2. Characteristics of oil types affecting the potential for seafood contamination 7
II-3. PAHs normally reported in chemical analyses 10
II-4. Example of solubilities of different oil types 13
II-5. Habitat utilization, feeding strategies, and risk of exposure to oil of different seafood groups 19
II-6. Half-lives of PAHs in bivalves based on laboratory tests of both water and sediment exposures 24
II-7. Presence and duration of taint and tissue contamination with petroleum compounds reported at various oil spills 25
II-8. Conceptual framework for seafood exposure to, uptake, and elimination of oil 27

III-1. National recommended water quality criteria for priority toxic pollutants for protection against human health effects 37

IV-1. Relative PAH potency estimates derived from various sources. 42
IV-2. Sport fishers consumption data 45
IV-3. Subsistence fishers consumption data 45

V-1. PAHs in foods 52

Document ID: 0.7.19.1897.3

I. INTRODUCTION AND BACKGROUND

Seafood safety is a concern raised at nearly every oil spill incident of any significance. Both actual and potential contamination of seafood can substantially affect commercial and recreational fishing and subsistence seafood use. Loss of confidence in seafood safety and quality can impact seafood markets long after any actual risk to seafood from a spill has subsided, resulting in serious economic consequences. Protecting consumers from unpalatable and unsafe seafood is a primary objective of federal and state public health agencies after a spill occurs. Seafood managers may be faced with making many urgent decisions after an oil spill, often based on limited data:

Should seafood harvest in the spill area be closed or restricted?

If closed, what criteria should be applied to re-open a fishery?

How should seafood safety and palatability be evaluated?

How can health risks best be communicated to the public?

Public health officials and other seafood managers do not routinely deal with oil spills as part of their day-to-day responsibilities. Consequently, they typically have little experience with risks to seafood from oil spills when they suddenly are faced with determining appropriate seafood management actions in response to a spill.

The objective of this guide is to provide seafood managers and other spill responders with information to help them evaluate the likelihood that an oil spill will contaminate seafood, determine whether seafood actually has been contaminated, and assess and communicate human health risk from eating contaminated seafood. The guide is divided into the following sections:

I. Introduction and Background

II. Assessing the Likelihood of Seafood Exposure and Contamination

Describes the factors that influence exposure, uptake, and elimination in aquatic organisms.

III. Monitoring Seafood for Contamination

Provides guidance on chemical and sensory testing methods, sampling strategies, and monitoring.

IV. Seafood Risk Assessment

Describes carcinogenic risk assessment methods, assumptions, and interpretation of chemical results.

V: Risk Communication

Provides guidance on communicating risks associated with contaminated seafood and gives examples of advisories.

A glossary of terms used in this guide is included in the appendix.

Document ID: 0.7.19.1897.3

Decision Process for Managing Seafood Safety

The guide generally follows the flow chart shown in Figure I-1, which suggests a decision process for managing seafood safety after oil spills. Throughout this process, the default is no closure or other restrictions on seafood harvest. In some cases there may be an initial, temporary de facto closure if the U.S. Coast Guard establishes a safety zone restricting access in areas of active oil recovery. Fishermen also may voluntarily avoid working in oiled areas to prevent oiling their gear and catch. This initial period after a spill can provide an opportunity to evaluate spill conditions and conduct limited testing to determine whether a precautionary closure or other immediate restrictions on seafood harvest are warranted.

As indicated on the flowchart, the first step for seafood managers after an oil spill has occurred is to collect and evaluate information on the nature of the spill. The spill response organization should be able to provide the following information almost immediately after the spill occurs:

- overflight maps and trajectory analyses showing the present and predicted spread of surface slicks;
- forecasts of weather and sea conditions that may affect the potential for oil to mix into the water column;
- results of oil weathering models;
- details about the oil type and expected behavior;
- predictions of oil fate and persistence; and
- in some cases, chemical results for water and sediment samples collected in the spill area.

Fishery management agencies and associations should be able to provide information on:

- species being harvested now or in the near future;
- geographical extent of the harvest areas;
- harvest gear types in use; and
- data on background levels of PAH contamination in the spill area (from NOAA Mussel Watch and other monitoring programs).

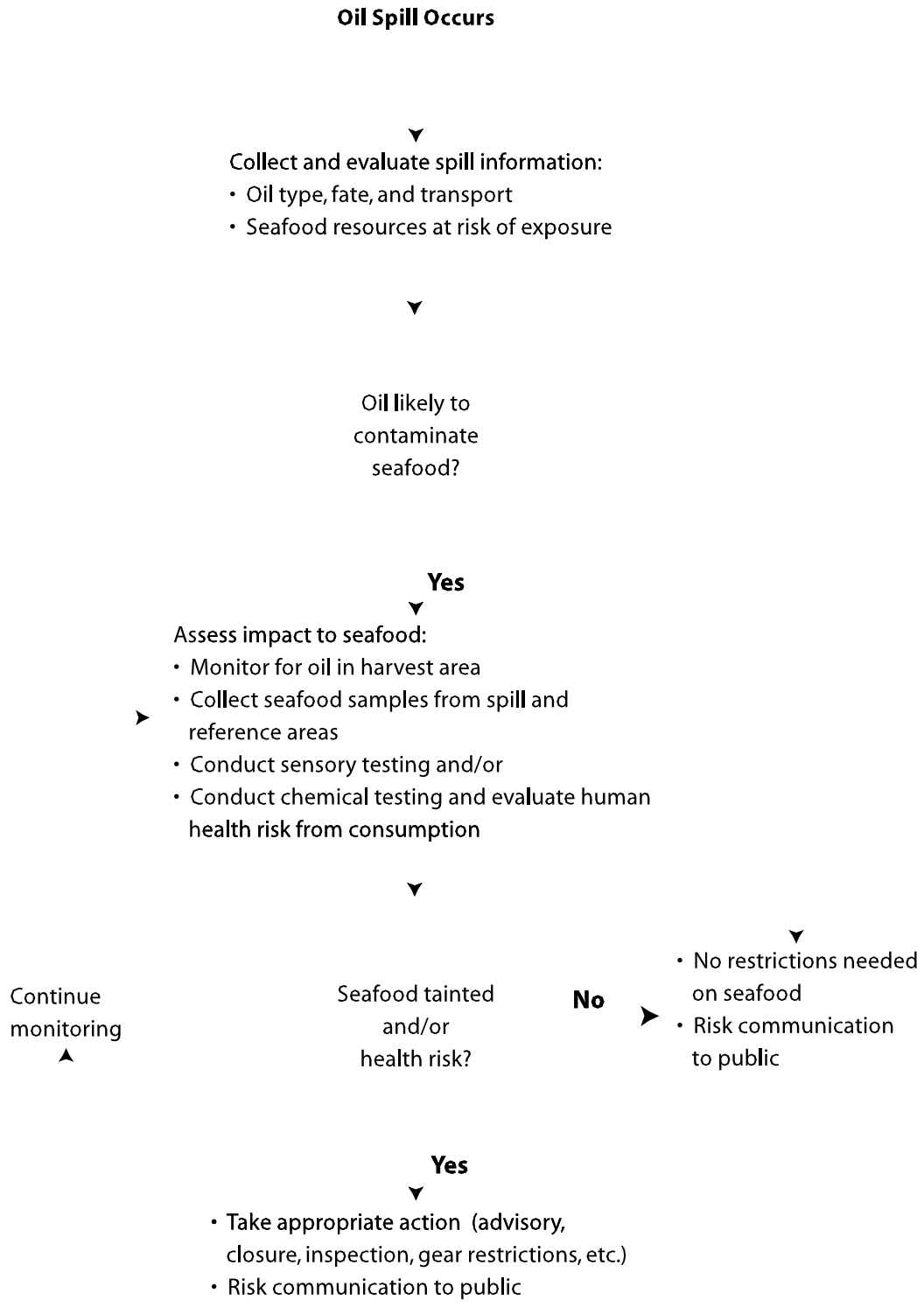
Based on this type of information, seafood managers can assess whether the oil spill is likely to expose and contaminate seafood. If seafood is not at significant risk, then no harvest closures or other seafood restrictions are needed, and this determination is communicated to the public. Because spills are dynamic, conditions are monitored and risks to seafood re-evaluated until the threat abates.

If managers determine that seafood may be affected, the next step is to assess whether seafood is tainted or contaminated to levels that pose a risk to human health through consumption. Information that can help determine the impacts includes:

- overflights and ground surveys identifying visible oil in seafood harvesting areas;
- chemical analysis of water and/or sediment samples from the harvest area;
- sensory testing of seafood samples from representative species and areas (both spill and reference areas);
- chemical analysis of tissue samples from representative species and areas (both spill and reference areas); and
- data on background levels of oil-related contaminants.

Document ID: 0.7.19.1897.3

Figure 1.1 Decision process for managing seafood safety after an oil spill



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Determining whether seafood has been contaminated can take substantial time. Developing and implementing sampling plans, conducting sensory and/or chemical testing, and evaluating results may require weeks or longer. Monitoring continues and the risk assessment process is repeated as necessary.

If seafood is tainted or is contaminated to a level posing a potential health risk, the next step is to select the most appropriate seafood management action(s). Examples of management actions include seafood advisories, increased inspections of harvested seafood or fishing gear, harvest closures, and fishing gear restrcitions. If a fishery is closed or otherwise restricted, seafood managers must establish criteria for determining that the seafood is palatable and safe for human consumption and that restrictions can, therefore, be lifted. No accepted international or federal criteria have been established for oil-related contaminants in seafood. State seafood managers generally have developed their own criteria for each spill, resulting in some inconsistencies among spills. Varying levels of background contamination also have contributed to inconsistencies in criteria applied.

Several papers summarize some of the difficult seafood management issues encountered after recent oil spills (Mearns and Yender 1997; Mauseth and Challenger 2001; Moller et al. 1989; Moller et al. 1999; Mauseth et al. 1997; Challenger and Mauseth 1998). Table I-1 also summarizes information on a few recent spills at which seafood safety was an issue of concern.

Seafood Safety Management Authority

Typically, authority to manage seafood to protect human health resides with state health agencies. Many states routinely chemically analyze finfish and shellfish tissues for contamination as part of their water-quality monitoring programs. If a state concludes that eating contaminated finfish or shellfish collected from state waters poses an unacceptable human health risk, it may issue local fish consumption advisories or harvest closures for specific water bodies or parts of water bodies and specific species.

The Food, Drug, and Cosmetic Act authorizes the U.S. Food and Drug Administration (USFDA) to protect and promote public health. The USFDA's responsibilities include keeping "adulterated" food off the market. The USFDA has jurisdiction over seafood that crosses state lines in interstate commerce.

The Magnuson Act, 16 U.S.C. 1801 *et seq.*, authorizes NOAA's National Marine Fisheries Service (NMFS) to regulate fishing in federal waters (generally from 3-200 miles from shore). The act is targeted toward fishery conservation rather than protection of public health or economic concerns. Fishery management plans, developed under the authority of the Magnuson Act, specify any limitations imposed on fishing for federally regulated species. Limits on fishing are enforced by means of regulations published in the Federal Register, in compliance with the Administrative Procedures Act. In the event of an oil or chemical spill, publication of an emergency rule in the Federal Register is required to put an enforceable, official fishery closure in place and to make any modifications to the closure once it is put into effect. The Magnuson Act was recently amended to allow emergency action fisheries closures to remain in effect indefinitely. Previously, such closures were limited to two 90-day periods.

Document ID: 0.7.19.1897.3

Table I-1. Recent oil spills where seafood monitoring was conducted

Spill Name/ Location	Oil Type/ Volume	Spill Conditions	Species Monitored	Closures*	References
M/V New Carissa Near Coos Bay, OR 4 Feb 1999	Two bunker oils and two marine diesels/ 70,000 gallons	Oil released in the surf zone (>5m waves) over several weeks	Oyster, shrimp, crab	Bivalves: 21 days, longer adjacent to the vessel	Gilroy (2000), Michel (2000) Mauseth and Challenger (2001)
M/V Kure Humboldt Bay, CA 5 Nov 1997	Intermediate fuel oil (IFO 180)/ 4,537 gallons	4 days of sheens in bay; light shoreline oiling	Mariculture oyster, rock crab	Mariculture oyster, crabs: 49 days	Challenger and Mauseth (1998)
T/V Julie N Portland, ME 27 Sept 1996	IFO 380 and No. 2 fuel oil/180,000 gallons total	Heavy shoreline oiling in Fore River & Casco Bay	Lobster, scallop, clam, mussel	Shellfish: 15 days	Mauseth et al. (1997)
M/T Provence Piscataqua River, NH 2 July 1996	Heavy fuel oil No. 6 (API 6.2)/ ~880 gallons	Released in Piscataqua River, most of the oil sank	Lobster	None	Mauseth et al. (1997)
T/V Sea Empress Milford Haven, Wales 15 Feb 1996	Forties light crude/ Heavy fuel oil #6/ 21,274,000 gallons total	Severe weather; extensive use of dispersants	Cockle, mussel, crab, lobster, whelk, wild salmon, and other finfish	Marine finfish: 82 days; whelk & crustaceans: 183 days; cockles: 125 days; mussel: 8-19 months	Law et al. (1997); Coates (1998)
T/B North Cape Block Island Sound, RI 19 Jan 1996	Home heating oil No. 2 828,000 gallons	Gale-force winds, release in surf zone, 6-7 m waves, naturally dispersed	Lobster, finfish, bivalves (coastal ponds)	Finfish and bivalves: 73 days; lobsters: 75-155 days	Mauseth et al. (1997)
T/V Braer Shetland Islands 5 Jan 1993	Gullfaks light crude/ 25,000,000 gallons	Hurricane-force winds; release in surf zone, naturally dispersed	Haddock, dab, farmed salmon, cod, sole, ling, lobster, scallop, edible crab	Wild finfish: 2 months; farmed salmon: 12 mo; burrowing lobster: >6 yrs	Kingston (1999) Topping et al. (1997) Whittle et al. (1997)
T/V Exxon Valdez Prince William Sound, AK 24 Mar 1989	Prudhoe Bay crude/ 11,000,000 gallons	Over 700 km of shoreline oiled	Finfish, bivalves from subsistence harvest areas	Herring and salmon: entire season; Advisories on bivalves in 4 subsistence harvest areas	Fall and Field (1996) Field et al. (1999)

*Closure does not necessarily indicate that either tissue contamination or taint was detected or persisted for as long a period as the closure remained in place.

Document ID: 0.7.19.1897.3

II. ASSESSING THE LIKELIHOOD OF SEAFOOD EXPOSURE AND CONTAMINATION

Each oil spill is a unique combination of conditions and events. Seafood is only at risk of contamination from a spill if it is exposed to the oil. Once exposed to oil, an organism becomes contaminated only to the extent it takes up and retains petroleum compounds. Factors that influence the potential for spilled oil to expose and contaminate seafood are discussed in this section.

Oil Types and Properties

Oil type and properties strongly influence whether seafood is exposed and contaminated. Crude oils and the refined products derived from them are complex and variable mixtures of hydrocarbons of different molecular weights and structures. They can contain hundreds of different compounds. All crude oils contain lighter fractions similar to gasoline, as well as heavier tar or wax fractions. Because of these differences in composition, different oils vary considerably in their physical and chemical properties. For example, consistencies of different crude oils vary, ranging from a light volatile fluid to a viscous semi-solid. Such differences in properties influence behavior of spilled oil and subsequent cleanup operations.

The petroleum hydrocarbons that comprise oil are composed primarily of hydrogen and carbon, but also can contain varying amounts of sulfur, nitrogen, oxygen, and trace metals. The three main fractions of hydrocarbon compounds in oils are saturates, aromatics, and polar compounds. The properties and relative abundance of each fraction in different types of oil products are summarized in Table II-1. Note that toxicity differs among different hydrocarbons and, therefore, different oils.

Table II-1. Components in oil and selected characteristics (modified from NRC 2002).

Group	**Sub-groups (alternate name)**	**Selected Characteristics**	**Typical Content in Oil (%)**
Saturates	1. Alkanes (aliphatics): n-alkanes (paraffins) are straight- chained; isoalkanes are branching 2. Cyclo-alkanes (cyclo-paraffins or naphthenes): saturated ring structures 3. Waxes: larger saturate compounds	High rate of microbial degradation up to C22; Low water solubility; Low aquatic toxicity	Gasoline: 50-60 Diesel: 65-95 Light crude: 55-90 Heavy crude: 25-80 Heavy fuel oil: 20-30
Aromatics	1. Monoaromatics (BTEX): single benzene ring 2. Polycyclic aromatic hydrocarbons (PAH): 2-6 benzene rings	Slower rate of microbial degradation than saturates; Higher water solubility; High aquatic toxicity	Gasoline: 25-40 Diesel: 5-25 Light crude: 10-35 Heavy crude: 15-40 Heavy fuel oil: 30-50
Polar Compounds	1. Resins: smaller compounds that bond with S, N, or O 2. Asphaltenes: very large compounds	Very slow microbial/ physical degradation; Very low water solubility/aquatic toxicity	Gasoline: 0 Diesel: 0-2 Light crude: 1-15 Heavy crude: 5-40 Heavy fuel oil: 10-30

Document ID: 0.7.19.1897.3

Oils have been grouped into types with similar properties to help predict their behavior at spills (NOAA and API 1994). This same approach can be used to characterize the relative risk of contamination of seafood by oil type. Table II-2 summarizes the properties and risk of seafood contamination for the five oil groups commonly encountered by spill responders. These generalizations can be used when initially screening an incident to evaluate the potential for seafood contamination.

Table II-2. Characteristics of oil types affecting the potential for seafood contamination (modified from NOAA and API 1994).

Gasoline Products	**Diesel-like Products and Light Crude Oils**	**Medium-grade Crude Oils and Intermediate Products**	**Heavy Crude Oils and Residual Products**	**Non-Floating Oils**
Examples – Gasoline	Examples – No. 2 fuel oil, jet fuels, kerosene, West Texas crude, Alberta crude	Examples – North Slope crude, South Louisiana crude, IFO 180, lube oils	Examples – San Joaquin Valley crude, Venezuelan crude, No. 6 fuel oil	Examples – Very heavy No. 6 fuel oil, residual oils, vacuum bottoms, heavy slurry oils
Specific gravity of <0.80; Floats on surface	Specific gravity of <0.85; API gravity of 35-45* Usually floats on surface; although can contaminate suspended sediments that are then deposited on the bottom	Specific gravity of 0.85-0.95; API gravity of 17.5-35* Usually floats on surface, although can mix with sand by stranding on beaches or in the surf zone, and be deposited in the nearshore	Specific gravity of 0.95-1.00; API gravity of 10-17.5* Usually floats on surface but can sink in fresh water or in seawater if they emulsify or mix with sand (in the surf zone or after stranding on beaches) and deposit in the nearshore	Specific gravity greater than 1.00; API gravity < 10* Will sink in fresh water; may sink in seawater if they emulsify or mix with sand (in the surf zone or after stranding on beaches) and deposit in the nearshore
High evaporation rates; narrow cut fraction with no residues	Refined products can evaporate to no residue; crude oils do leave residues	Up to one-third will evaporate in the first 24 hours; will form persistent residues	Very little product loss by evaporation; will form persistent residues	Very little evaporation when submerged; also very slow weathering overall when submerged
Low viscosity; spread rapidly to a thin sheen; readily dispersed; will not emulsify	Low to moderate viscosity; spread rapidly into thin slicks; readily dispersed by natural processes; may form unstable emulsions	Moderate to high viscosity; dispersed by natural processes only very early in the spill; readily emulsifies	Very viscous to semisolid; will not readily disperse or mix into the water column; can form stable emulsions	Very viscous to semisolid; will not readily disperse or mix into the water column; can form stable emulsions
Low risk of seafood contamination because of rapid and complete loss via evaporation; potential contamination for spills in confined areas with high mixing, such as small rivers; no reported cases of tainting for marine spills	Moderate to high risk of seafood contamination because relatively high content of low molecular weight, water-soluble aromatic hydrocarbons, which are semi-volatile and so evaporate slowly; dispersed droplets are also bio-available	Moderate to high risk of seafood contamination because of high percentage of low-molecular weight aromatic hydrocarbons; coating of gear and intertidal species can be significant	Low risk of finfish contamination because of low water-soluble fraction and little natural mixing in the water; moderate to high risk of shellfish contamination where shoreline oiling is heavy; can coat gear and intertidal species	Low risk of finfish contamination because of high viscosity; where thick oil accumulates on the bottom, could become a chronic source; moderate to high risk of contamination of benthic species because of coating and persistence of submerged oil

*API Gravity is used by the petroleum industry rather than density. It is determined by the following equation: API at 60°F = 141.5/oil density -131.5.

Document ID: 0.7.19.1897.3

Seafood contamination can result from exposure to the dissolved fraction of oil, dispersed oil droplets, or an oil coating. With regard to the dissolved fraction, the aromatic fraction of the oil poses the greatest exposure risk because aromatics are relatively more soluble than the other components in oil. Saturates are a major component of oil, but they have lower solubility and higher volatility compared to aromatics of the same molecular weight. Furthermore, Heras et al. (1992) has concluded that saturates are virtually odorless and tasteless, and do not contribute to tainting.

Of the aromatic hydrocarbons, the mono-aromatic hydrocarbons, such as benzene, toluene, ethyl benzene, xylene (known collectively as BTEX), other substituted benzenes, and the 2- to 3-ringed PAHs (naphthalene, fluorene, dibenzothiophene, anthracene and their substituted homologues, referred to as low-molecular weight PAHs) comprise over 99 percent of the water-soluble fraction (McAuliffe 1987). The distribution of these compounds in the spilled oil is one measure of the potential for contamination of seafood from water exposure. Figure II-1 shows the PAH composition for typical crude oils and refined products. Table II-3 lists the abbreviations used for PAHs, groups the PAHs into low- and high-molecular weight categories, and shows the number of benzene rings. Most crude oils are composed of a wide range of compounds, including the PAHs of concern.

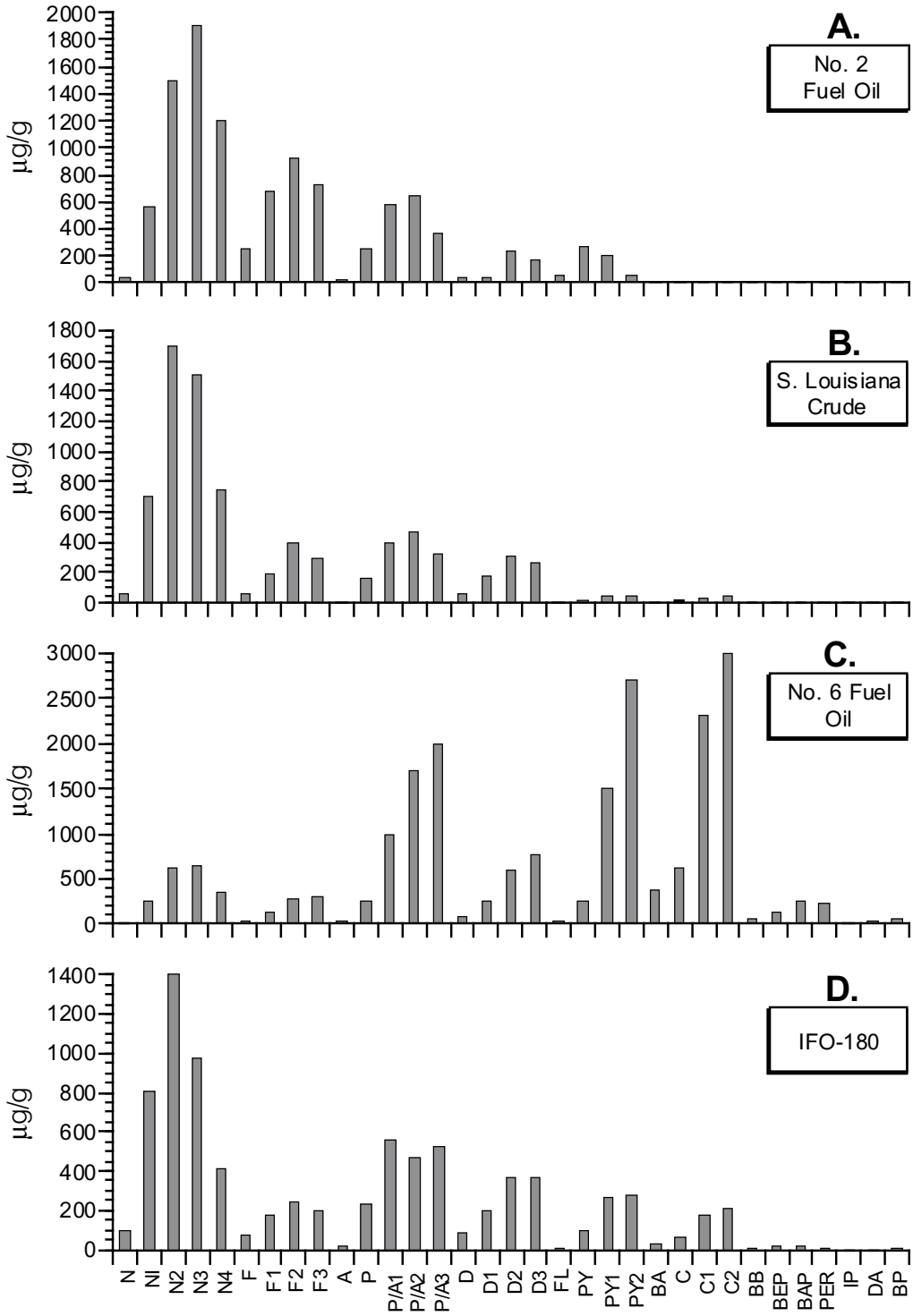
Note that compounds in petroleum-derived oils have a general pattern of increasing abundance with higher level of substitution of a benzene ring (e.g., unsubstituted parent naphthalene is less abundant than C1-naphthalene, which is less abundant than C2-naphthalene). This pattern indicates that the PAHs are "petrogenic," that is, they are from petroleum oils. The PAH pattern is very different for hydrocarbons produced from the combustion of fossil fuels ("pyrogenic" hydrocarbons), in that the parent PAHs are by far the dominant compounds in hydrocarbons of pyrogenic origin. Also, it is important to note that crude oils contain very low concentrations of the high-molecular weight PAHs (e.g., 4- and 5-ringed compounds such as pyrene, chrysene, and benzo[a]pyrene) that are associated with combustion by-products. These differences in relative PAH abundance are key components of fingerprinting analysis.

Refined products have characteristic ranges of PAHs representative of the distillation fraction in the product. In Figure II-1, note that the PAHs in the No. 2 fuel oil are dominated by the 2- and 3-ringed compounds. Heavy fuel oils are sometimes cut or blended with lighter fractions to meet customer specifications, as is the case with the intermediate fuel oil (IFO-180) in Figure II-1D, and so can contain some low-molecular weight PAHs.

For exposure via ingestion of whole oil droplets or contaminated sediments, the high-molecular weight PAHs pose greater risk of contamination. These compounds have low water solubility and are more lipophilic. In organisms with relatively limited capability to metabolize PAHs, such as bivalve mollusks, the high-molecular weight compounds are more likely to accumulate in tissues and persist for longer periods, compared to the low-molecular weight PAHs, which are more rapidly eliminated (Meador et al. 1995). Finfish and some crustaceans, however, readily metabolize and eliminate all of these compounds rapidly.

Document ID: 0.7.19.1897.3

Figure II-1. Pattern of PAH distribution for different oil types: A) No. 2 fuel oil; B) South Louisiana crude, a medium crude oil; C) No. 6 fuel oil, a heavy oil; and D) an intermediate fuel oil that is a mixture. Note that high-molecular weight PAHs such as benzo[a]pyrene (BAP) have very low concentrations in petroleum oils.



Document ID: 0.7.19.1897.3

Table II-3. PAHs normally reported in chemical analyses for petroleum compounds (after Sauer and Boehm 1995).

PAH	Abbreviation	No. of Benzene Rings	Molecular Weight
Naphthalene	N	2	Low
C1Naphthalene	N1	2	Low
C2Naphthalene	N2	2	Low
C3Naphthalene	N3	2	Low
C4Naphthalene	N4	2	Low
Biphenyl	BI	2	Low
Fluorene	F	2	Low
C1Fluorene	F1	2	Low
C2Fluorene	F2	2	Low
C3Fluorene	F3	2	Low
Acenaphthylene	AC	3	Low
Acenaphthene	CE	3	Low
Dibenzothiophene	D	3	Low
C3Dibenzothiophene	D3	3	Low
Anthracene	A	3	Low
Phenanthrene	P	3	Low
C1Phenanthrene/Anthracene	P/A1	3	Low
C2Phenanthrene/Anthracene	P/A2	3	Low
C3Phenanthrene/Anthracene	P/A3	3	Low
Napththobenzothiophene	NBT	3	Low
C1Napththobenzothiophene	NBT1	3	Low
C3Napththobenzothiophene	NBT3	3	Low
Fluoranthene	FL	4	High
Pyrene	PY	4	High

Document ID: 0.7.19.1897.3

PAH	Abbreviation	No. of Benzene Rings	Molecular Weight
C1Pyrene	PY1	4	High
C2Pyrene	PY2	4	High
Benzo[a]Anthracene	BA	4	High
Chrysene	C	4	High
C1Chrysene	C1	4	High
C2Chrysene	C2	4	High
C3Chrysene	C3	4	High
C4Chrysene	C4	4	High
Benzo[b]Fluoranthene	BB	5	High
Benzo[k]Fluoranthene	BK	5	High
Benzo[e]Pyrene	BEP	5	High
Benzo[a]Pyrene	BAP	5	High
Dibenzo[a,h]anthracene	DA	5	High
Indeno[1,2,3-cd]Pyrene	IP	6	High
Benzo[g,h,i]perylene	DP	6	High

Oil Fate and Pathways of Exposure

Oil behavior after release determines whether seafood is at risk of exposure. Oil behavior is a function of the processes described below.

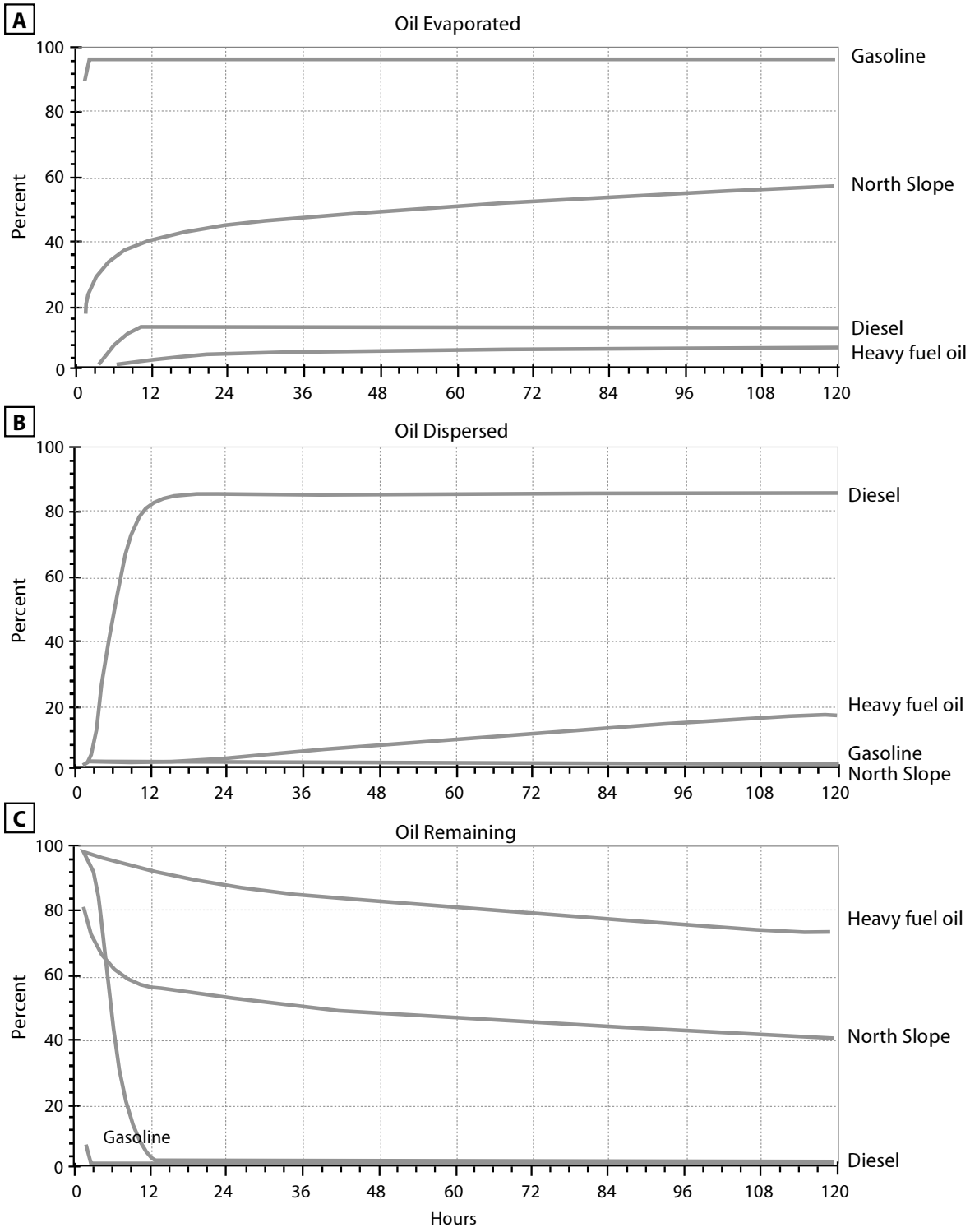
Early weathering processes that change oil properties

Evaporation

Evaporation is the transfer of the volatile fractions in oil from the liquid phase to the vapor phase. The rate of evaporation depends on the composition of the oil, surface area of the slick, wind velocity, sea state, water temperature, and solar radiation. Most evaporation occurs in the first 24 hours after release, though it continues at a much lower rate for up to two weeks (NOAA and API 2001). During the first 24-48 hours after a spill, evaporation is the most important weathering process. The amount of oil that evaporates depends primarily on the oil's composition. For light crude oils and refined products, evaporation can account for up to 75 percent loss within a few days. Figure II-2-A shows plots of the loss by evaporation over time for representative oils of the first four oil groups listed in Table II-2. The plots are output from the NOAA oil fate model ADIOS 2 for the same spill scenario for all oil types (Lehr et al. 2000). The lighter the oil, the higher will be the loss by evaporation.

Document ID: 0.7.19.1897.3

Figure II-2. Plots of predicted evaporation and dispersion for oils representative of four oil types: gasoline, diesel, medium-grade crude oil (North Slope Crude), and heavy fuel oil generated using NOAA's oil weathering model ADIOS 2 (Lehr et al. 2000). The same spill conditions were used for each oil: spill volume 10,000 gallons instantaneously released; wind speed 10 mph; water temperature 60° F.



Document ID: 0.7.19.1897.3

Evaporation is also important in that the more volatile fractions are also more water-soluble and thus contribute significantly to the oil's uptake and toxicity. Evaporation dominates over dissolution in most spill conditions, so it is a key process that reduces the risk of aquatic exposure to the more soluble, toxic compounds, such as benzene, toluene, ethylbenzene, and xylene (BTEX) and low-molecular weight polycyclic aromatic hydrocarbons (PAHs).

Dissolution

Dissolution is the transfer of water-soluble components in oil to the water. It begins immediately after oil is released and is likely to continue throughout the weathering process. The loss of oil due to dissolution, however, is minor when compared to the other weathering processes. It is not an important process affecting the fate or mass of the spilled oil, since only a small amount dissolves. Less than 0.1 % (very heavy oil) to 2% (gasoline) of the spilled oil volume actually dissolves into the water column. As shown in Table II-4, light refined products, such as gasoline, are more soluble than heavier oils, such as crude oil.

The most water-soluble components in oil are the low-molecular weight aromatic hydrocarbons: the mono-aromatics such as benzene through xylene, and the 2- and 3-ring PAHs, such as naphthalene and phenanthrene (McAuliffe 1987). These components are also the most volatile, and they rapidly evaporate from solution. The rate of dissolution depends on the oil's chemical composition and the surface area of the oil and water.

Though only a small percentage of the spilled oil volume dissolves into the water column, the components that do dissolve are often the most toxic and may also taint seafood at low concentrations. Concentrations of 450 micrograms per liter (µg/L, equal to parts per billion, or ppb) of the water-soluble fraction of a light crude oil have been reported to cause taint in salmon after six hours in laboratory tests (Heras et al. 1992). Davis et al. (1992) reported the tainting threshold for trout exposed to diesel fuel to be 0.08 nanograms per liter (ng/L, equal to parts per trillion). Actual dissolved oil concentrations at spills vary widely, depending on the oil type and environmental conditions. For example, during the *North Cape* spill of approximately 800,000 gallons of home heating oil under conditions of very high natural dispersion, concentrations of dissolved PAHs in water samples were measured to be 3-167 ppb within a few km of the release site (French 1998). These dissolved PAH concentrations are considered to be unusually high for oil spills. During the *New Carissa* release of 70,000 gallons of both marine diesel and bunker oils into the surf zone off Oregon, total dissolved PAHs in water sampled 2-5 km from the release site were reported to be in the range of 0.5-5 ppb (Payne and Driskell 1999).

Table II-4. Example of solubilities of different oil types (Jokuty et al. 1999).

Oil Type	Aqueous Solubility (mg/L or ppm)
Unleaded gasoline	260.9
Diesel	60.4
Prudhoe Bay crude	20.5
Lagomedio	10.0

Document ID: 0.7.19.1897.3

Dispersion

Wind and waves can break oil slicks into small droplets that mix or disperse into the water column. Under calm conditions, the oil droplets can re-coalesce and resurface as slicks because they are lighter than water. These droplets are composed of the whole oil. Thin slicks of lighter, low-viscosity oils (such as diesel) readily disperse naturally. Heavier, more viscous oils or oils that have become more viscous due to weathering are more resistant to natural dispersion. Applying chemical dispersants, which reduce the oil's surface tension, can enhance natural dispersion. Dispersion is an important mechanism that enhances oil degradation by increasing the exposed surface area. Dispersed oil droplets can be ingested directly (such as by plankton or filter-feeding bivalves) or secondarily by eating oil-contaminated prey. Most past spills that contaminated seafood involved conditions of high natural dispersion (e.g., *Braer*, *North Cape*, and *Amoco Cadiz*).

Emulsification

Emulsification is the process by which one liquid disperses into another in the form of small droplets. This process is most important at oil spills where water droplets mix into the oil and form a stable emulsion (called a "mousse") that does not easily break up. Emulsification causes several response problems: 1) a mousse often contains 50-80 percent water, thus the volume of oily material to be recovered is increased several-fold; 2) emulsified oil is very viscous and difficult to remove or pump (Fingas et al. 1994); and 3) emulsified oil degrades more slowly (NRC 1985).

Comparison of evaporation and dispersion for different oil types

Figure II-2 shows the predicted fate of the first four oil types listed in Table II-2 using the NOAA oil-weathering model ADIOS™2 under the same spill conditions. Note the differences among oil types in the amounts lost due to each of the dominant weathering processes. Light, refined products such as gasoline and diesel evaporate and disperse rapidly, generally within six hours of release. Evaporation can be a dominant weathering process for crude oils, depending on the type of crude. North Slope crude is relatively persistent, particularly if it emulsifies, as in this scenario. Natural dispersion is an important process for low-viscosity oils that are readily broken into droplets by wave action. More viscous oils do not normally disperse naturally. Heavy oils are resistant to weathering and highly persistent.

Gasoline: A light, refined product like gasoline can quickly dissipate when spilled in open-ocean environments. In this particular scenario, strong winds in the model evaporated and dispersed the entire product in the first three hours after the release. The "Oil Remaining" graph shows none of the gasoline remaining three hours after the spill.

Diesel: The diesel selected for this scenario is a light, refined product and, under light wind conditions, the oil will likely remain on the surface with much of the product evaporating. However, strong winds in the scenario (15 knots) will generate breaking waves that tear the surface slick into small droplets. The oil droplets are driven into the water column and, if the droplets are small enough, natural turbulence will prevent the oil from resurfacing. The "Percent Oil Dispersed" graph shows that over 85% of the diesel has dispersed about 12 hours after the spill. Because very little of the oil was available at the surface, a much smaller amount, less than 15%, has evaporated. The "Percent Oil Remaining" graph shows that no product remains after 12 hours.

It is important to note that the terminology for refined products is not standardized, and heavier intermediate fuel oils are sometimes referred to as "marine diesel." These heavier products are much less volatile than normal diesel or Fuel Oil No. 2 and form a more persistent slick than shown in Figure II-2.

Document ID: 0.7.19.1897.3

North Slope Crude: North Slope crude oil is known to entrain water droplets and form an emulsion if there is sufficient energy in the environment and if a sufficient amount has evaporated. This scenario uses a 15-knot wind so that about 40% of the oil has evaporated in the first 12 hours. After this time, the oil begins to entrain water droplets, eventually forming a stable emulsion containing 70 to 90% water. This process increases the viscosity of the product, making it more difficult for turbulent energy to tear the oil into small droplets and disperse it. Note that the "Percent Oil Dispersed" graph shows that none of the product has dispersed.

Because the *North Slope* crude has emulsified and persisted, the "Percent Oil Remaining" graph shows about 40% remaining 120 hours after the initial release.

Heavy Fuel Oil: Heavy refined products, such as heavy fuel oil, have been refined to remove the lighter components and, as a result, are somewhat pre-weathered. Under strong winds, the "Oil Evaporated" graph shows less than 10% of the product evaporating over the first 120 hours after the release. Heavy products are known to be viscous and, therefore, less likely to be torn into small droplets and dispersed. The "Percent Oil Dispersed" graph shows that less than 20% of the heavy fuel oil disperses over the first 120 hours. Finally, the "Percent Oil Remaining" graph indicates that about 70 to 80% of the oil remains after 120 hours, suggesting that heavy fuel oil is persistent.

During a spill, oceanographers and modelers will generate spill-specific data on the spilled oil's weathering, behavior, trajectory, and fate. They can estimate the present and future spread of surface slicks, extent and persistence of dispersed and dissolved oil plumes, and the risk of oil sedimentation. This information can help seafood managers assess the risk of spilled oil exposing seafood.

Long-term weathering processes that change oil properties

Biodegradation

Biodegradation is the process by which hydrocarbon-degrading organisms such as bacteria, fungi, and yeasts break down petroleum hydrocarbons ultimately into carbon dioxide and water. Oil degradation rates depend on the oil type and may be further limited by oxygen, nutrients, and/or the surface area available to microorganisms. Small droplets of dispersed oil biodegrade more rapidly than tarballs or surface slicks. Light crude oils and light refined products readily biodegrade within weeks to months. Heavier oils can require years to decades to biodegrade. Biodegradation is a very important removal mechanism for persistent oil residues remaining after shoreline cleanup efforts have concluded.

Photo-oxidation

In the presence of oxygen, natural sunlight can cause petroleum hydrocarbons to undergo chemical reactions, a process known as photolysis (NRC 1985). Although the toxicity of photo-oxidation products is a concern because they are more water-soluble and reactive, the rates of photo-oxidation of liquid or solid fractions of the oil are too slow to significantly affect the mass balance of a spill within the first few months (Jordan and Payne 1980).

Sedimentation

Sedimentation is the process by which particles of floating oil sink to the bottom of the water column and become part of the bottom sediments. Sedimentation of oil can occur when oil droplets sorb onto particulate matter, such as sand and clay. Sorption onto suspended sediments in the water column is likely only under very high wave and wind conditions. For example, during the *Braer* spill, 25,000,000 gallons of a light Gullfaks crude oil were released from the grounded vessel during hur-

Document ID: 0.7.19.1897.3

ricane-force winds, and an estimated 35 percent of the oil was deposited on the seabed in an area of 4,000 km2 (Kingston 1999). The sedimented oil provided a long-term pathway for exposure to benthic organisms. However, this degree of fine-grained, subtidal sediment contamination is highly unusual. More frequently, sedimentation occurs when stranded oil on sandy beaches adheres to the sediment, then is eroded and deposited in small quantities in the nearshore environment (NRC 1999). Sedimentation can also occur through deposition as fecal pellets after ingestion by marine organisms. During the *Arrow* spill in Chedabucto Bay, Canada, zooplankton ingested naturally dispersed Bunker C oil and later excreted it in their fecal pellets (Conover 1971).

Weathering processes that change the location of oil

Spreading

Oil quickly spreads into a very thin layer on the water surface. The rate of spreading is determined by the surface tension of the oil, water currents, and wind. Spreading enhances the rate and effect of other weathering processes by increasing the oil's exposure to sunlight and air.

Advection

Oil moves on the water's surface due to forces generated by winds and currents in a process known as advection. The speed and direction of wind can vary rapidly over time, so weather forecasts must be closely monitored to correctly predict oil spill trajectories.

Submersion

Most oils float on the water surface because they are less dense than water. If oil is denser than water, or becomes denser as the lighter components evaporate, the oil may submerge. If it attaches to suspended sediments, the oil may sink to the bottom (NRC 1999). Once oil is deposited on the bottom, weathering processes are very slow. Submerged oil can be a chronic source of contamination both from slowly dissolving water-soluble fractions and from physical coating of seafood and fishing gear.

Shoreline Stranding

For most oil spills, the oil floats on the water surface, transported by wind and currents until it strands on the shoreline. Stranded oil can directly coat intertidal organisms, habitats, and fishing and aquaculture equipment. Oil stranded on shorelines adjacent to a fishery can be a source of chronic contamination, particularly where shoreline cleanup is not effective or not attempted due to concerns of causing greater harm to the oiled habitat. Even the most effective shoreline cleanups rarely remove all of the stranded oil. Remaining oil is removed or degraded by natural processes. Natural removal processes usually include physical breakup and dispersal of persistent oil residues over a period of months to years (Shigenaka 1997; Hayes and Michel 1999). This remobilized oil, either as whole oil droplets or attached to suspended sediments, can become available to filter feeders, particularly intertidal and shallow subtidal beds of mussels, oysters, and clams (Shigenaka and Henry 1995).

Shoreline type and degree of exposure influence how long oil persists as a secondary source of seafood contamination. Large volumes of oil can penetrate permeable substrates, such as sand beaches, gravel beaches, and rocky rubble shores. Once oil has penetrated into the substrate, weathering rates are slowed and there can be episodic releases of relatively fresh oil. If the oiled shorelines also are sheltered from direct wave energy, the potential for long-term persistence of oil greatly increases. Sheltering can be large-scale, such as in bays and estuaries; it can also be localized, such as in the lee of a large boulder on an otherwise exposed shoreline. For example, during the extensive monitoring of subsistence seafood following the *Exxon Valdez* oil spill, an oil spill health task force determined that finfish from all areas were safe to consume, but that intertidal shellfish from specific areas should not be eaten (Fall and Field 1996; Field et al. 1999). These specific areas were a small

Document ID: 0.7.19.1897.3

number of sheltered, sedimentary beaches with high levels of oil contamination in the intertidal sediments. Another example is the 1996 *Sea Empress* oil spill in Milford Haven, Wales. Six months after the *Sea Empress* spill, the only seafood harvest activities still restricted outside of Milford Haven were the exploitation of bivalves where heavy shoreline oiling had occurred in sheltered areas (Law et al. 1997).

Seafood Contamination Terminology

Adulteration: According to the U.S. Food and Drug Administration (FDA), a food is considered adulterated if it bears or contains any poisonous or deleterious substance that may render it injurious to health, if it contains any filthy, putrid, or decomposed substances, or if it is otherwise unfit for food (Federal Food, Drug, and Cosmetic Act, Section 402).

Taint: Taint is commonly defined as an odor or flavor that is foreign to a food product, including seafood (ISO 1992). According to this definition, the presence of a taint simply indicates that flavor or odor is altered; it does not characterize the nature of the off-flavor or off-odor, quantify the degree of taint, or imply health hazard.

Body Burden: The concentration of a contaminant in an organism, reported for the whole animal, or for individual tissues such as gonads, muscle, and liver, is referred to as the body burden. It can be reported on the basis of either wet or dry weight of the organism or tissue.

Uptake: Uptake is the process of contaminant accumulation in an organism. Uptake of oil can occur via the following mechanisms:

- adsorption (adhesion) of oil on the skin
- absorption of dissolved components from the water through the skin (including interstitial water exposures for infauna)
- absorption of dissolved components through the gills
- adsorption of dispersed oil droplets to the lipid surfaces in the gills
- ingestion of whole oil droplets directly or of food contaminated with oil, followed by sorption in the gut

Many factors influence uptake, including the exposure concentration and duration, pathway of exposure, lipid content, and feeding and metabolic rates. Uptake from water generally occurs more quickly than dietary uptake or uptake from sediments.

Bioaccumulation: The net accumulation of a substance by an organism as a result of uptake from all environmental sources and possible routes of exposure (contact, respiration, ingestion, etc.) is termed bioaccumulation (ASTM 1994).

Bioconcentration: The net accumulation of a substance as a result of uptake directly from aqueous solution (ASTM 1994).

Biomagnification: The increase in body burden of a contaminant with trophic level is called biomagnification. PAHs generally do not biomagnify in finfish and shellfish because of their low dietary uptake efficiencies, on the order of 1 to 30%, reflecting slow kinetics and short residence time in the gut (Meador et al. 1995).

Elimination: All of the processes that can decrease tissue concentrations of a contaminant, including metabolism, excretion, and diffusive loss are collectively termed elimination (Meador et al. 1995). *Metabolism* is an active physiological process whereby a contaminant is biotransformed into metabolites. For PAHs, the metabolites are more water-soluble, which facilitates *excretion*, another

Document ID: 0.7.19.1897.3

active physiological process that eliminates contaminants (both parent compounds and metabolites) through bile, urine, or feces. *Diffusive loss* refers to a decrease in tissue burden caused by simple diffusion out of the organism, which is controlled by partitioning between tissue and water. Meador et al. (1995) recommend that *depuration* be used for the mechanism of diffusive loss, and *elimination* be used for the combined process of metabolism, excretion, and diffusive loss. These definitions are slightly different than those used by ASTM (1994), which defines depuration as "the loss of a substance from an organism as a result of any active or passive process" and provides no definition for elimination. However, the definitions by Meador et al. (1995) are more precise and will be followed in this document. Elimination can also include release of PAHs in lipid-rich eggs or gametes during spawning.

Elimination processes begin as soon as uptake occurs. In constant exposure experiments, body burdens tend to reach a "steady state" in which fluxes of the contaminant moving bidirectionally across a membrane or boundary between compartments or phases have reached a balance, not necessarily equilibrium (Meador et al. 1995). When the exposure decreases, elimination rates depend, in part, on the hydrophobic properties of the compound (Spacie and Hamelink 1982). The half-lives of individual compounds vary (see discussion below).

Growth Dilution: Growth dilution occurs when the rate of tissue growth exceeds the rate of accumulation, such that it appears as though elimination is occurring because the tissue concentration is decreasing (Salazar and Salazar 2001). This process may be important when monitoring bivalves during the growing season.

Biological and Ecological Factors Affecting PAH Contamination of Seafood

Petroleum contamination of finfish and shellfish depends upon a variety of biological and ecological factors. Understanding how different feeding strategies, habitat utilization, and physiology influence the likelihood of petroleum contamination of particular species is critical when managing seafood after spills. Table II-5 summarizes several of these factors for different types of seafood organisms.

Metabolic Capacity

Both vertebrates and invertebrates have mixed-function oxygenase (MFO) enzyme systems that enable them to metabolize petroleum substances (Meador et al. 1995). Enzymatic activity is low in invertebrates compared to vertebrates, and therefore induction of metabolism occurs at a higher contamination level in invertebrates (Marsh et al. 1992). Finfish are able to rapidly and efficiently biotransform or metabolize PAHs and excrete the resulting metabolites into bile (Varanasi et al. 1989). These metabolites do not pose a health risk to human consumers of the finfish. Marine invertebrates, including most shellfish, metabolize petroleum compounds slowly and inefficiently; consequently, they tend to accumulate high concentrations and wide ranges of PAHs (Law and Hellou 1999).

Metabolic capacity of organisms is important from a seafood safety standpoint because some PAHs have carcinogenic potential for human consumers, due to the highly chemically reactive oxidation products that form during the first stage of metabolism in vertebrates (ATSDR 1995; Hellou 1996). Human consumers often eat invertebrates in their entirety, and, therefore, may ingest all of the hydrocarbons that have accumulated in the organism and may be present in the organism's gut. Because finfish, like other vertebrates, rapidly and efficiently metabolize petroleum hydrocarbons, they generally pose little or no health risk to human consumers. Exceptions to this may occur for consumers for whom the edible portion of finfish includes tissues such as liver and gall bladder, which tend to accumulate higher levels of PAHs than muscle tissue.

Document ID: 0.7.19.1897.3

Table II-5. Habitat utilization, feeding strategies, and risk of exposure to oil of different seafood groups (adapted from RPI 1987, 1989).

Seafood Groups	Examples	Metabolic Capacity	Habitat Utilization	Feeding Strategies	Risk of Exposure
Finfish					
anadromous fish	sturgeon, herring, salmon	high capacity	nearshore and shallow water during spawning	predatory	moderate to high in nearshore/shallow water during spawning
marine pelagic and bottomfish	mackerel, jacks, cod, flounder	high capacity	highly mobile, most species prefer depths of > 10 m	predatory	low
reef fish	sea basses, snappers, porgies	high capacity	relatively deep waters (10 - 200 m)	predatory	low to moderate; higher risk in shallow water
estuarine fish	bluefish, mullet, anchovies	high capacity	spawning in intertidal or subtidal habitats; offshore winter migrations	predatory	moderate to high in nearshore/shallow water during spawning
Crustaceans					
lobster, crabs, shrimp	American lobster, pink shrimp, blue crab	reduced capacity	may migrate seasonally; range of depths between estuarine and deep waters	predatory, omnivorous, scavengers	benthic burrowing, estuarine/shallow water species at higher risk than deep water species
Mollusks					
oysters, mussels	American oyster, Pacific oyster, blue mussel	very limited capacity	shallow subtidal and intertidal regions, estuaries; attached to substrates	filter-feeders	high
clams, scallops	hard clam, soft-shell clam, bay scallop, sea scallop	very limited capacity	intertidal and shallow subtidal areas; benthic or buried in the sediment; some mobility	filter/deposit feeders	high
gastropods	abalone, conch, snails, whelk, limpet, top shell	very limited capacity	intertidal and shallow to deep subtidal areas; epibenthic; some mobility	grazers and predatory	moderate to high

Document ID: 0.7.19.1897.3

Feeding Strategies and PAH Exposure

The feeding strategies of different marine organisms affect their likelihood of exposure to PAHs:

- Finfish and crustaceans are predatory or omnivorous. They are exposed to oil by ingesting contaminated food items or sediments, and by absorbing water-soluble petroleum compounds through the gills.
- Filter feeding bivalves may ingest dispersed oil droplets and absorb water- and lipid-soluble petroleum compounds as they filter plankton and detritus suspended in the water column.
- Deposit-feeding bivalves may be exposed to oil through contaminated sediments as they feed on benthic detritus, and as they absorb water-soluble compounds from the interstitial water in sediments.

Uptake from the water tends to be more rapid than uptake through the diet for both vertebrates and invertebrates. Studies of dietary uptake of PAHs in finfish indicate low uptake efficiencies, on the order of 1 to 30%, reflecting slow kinetics and short residence time in the gut (Meador et al. 1995). Recent studies have shown that the rate of uptake by sediment contact and ingestion varies, yet it tends to be lower than from the water (Meador et al. 1995). How PAHs partition among water, sediment, and prey items in different aquatic environments may impact the bioavailability of the contaminant. In general, both filter-feeding and deposit-feeding bivalves are considered to be at a higher risk of exposure than predatory or omnivorous finfish and crustaceans due to the persistence of oil in contaminated sediments.

Habitat Utilization and Behavior

A species' habitat utilization and behavior affect the likelihood it will be exposed to oil during a spill (Table II-5).

Finfish

- Most pelagic and benthic finfish that occur in relatively deep waters have a low exposure risk to spilled oil because they are highly mobile and often are able to avoid oiled areas (Moller et al. 1989; Law et al. 1997; Law and Hellou 1999). Also, oil concentrations in the water column are usually low and decline very rapidly, minimizing exposure. Exceptions may occur if a large amount of fresh, light oil is mixed into the water column (as occurred at the *North Cape* and *Braer* oil spills) or if bottom sediments become contaminated.
- Finfish that spawn or occur in nearshore, shallow water areas in intertidal and subtidal zones (e.g., salt, brackish, or freshwater marshes, creeks, or rivers) and in shallow reef zones have a greater risk of exposure than offshore finfish, due to shoreline oiling.
- Penned finfish have a greater risk of exposure than wild finfish because they cannot avoid oil in the water column. Most cases of finfish contamination at oil spills have involved penned finfish at spills where a significant quantity of oil was mixed into the water column.

Crustaceans

- Crustaceans (lobsters, crabs, shrimp) have a moderate risk of exposure because they have some mobility, but utilize benthic habitats in shallow nearshore and estuarine areas.
- Some species of lobsters and shrimp migrate seasonally between estuaries and offshore areas, and are at a higher risk of exposure when they are in nearshore, shallow waters.

Document ID: 0.7.19.1897.3

- When subtidal sediments are significantly contaminated, species that burrow into soft sediments are at higher risk of exposure. For example, during the *Braer* spill, the burrowing Norway lobster remained contaminated for over five years, whereas epibenthic lobsters eliminated petroleum contaminants to background levels of PAHs in one month (Kingston 1999).

Mollusks

- Most mollusks, especially bivalves, are at high risk of contamination because they are sessile and unable to avoid exposure. They generally occur in substrates in shallow subtidal and intertidal areas where exposures are likely to be most persistent if sediment is contaminated. Filter feeding mollusks can ingest dispersed oil and oil attached to suspended sediments. Deposit feeders can ingest oil-contaminated sediments. The longest seafood closure periods associated with oil spills have been for bivalves in areas where adjacent sediments remained heavily contaminated (Law et al. 1997).
- Some bivalve species use defense mechanisms during oil spills, including closing their shells or shutting down their pumping systems, thereby eliminating the uptake route for the contaminants (RPI 1989). Some species can remain closed for several weeks without adverse effects, whereas others start to degrade a few days after closure.

Temperature

It is generally accepted that uptake and elimination rates both tend to increase with increasing temperature, though there is some contradiction among reported study results for PAHs (Fucik and Neff 1977; Landrum 1982; Jovanovich and Marion 1987; Meador et al. 1995).

The rate of reaction in chemical and biological processes generally increases 2- to 4-fold for a 10°C increase in temperature (Kennedy et al. 1989; French 2000). Uptake, metabolic, and elimination rates typically increase with temperature, but at different rates, making it difficult to predict body burdens under the constantly changing oil concentrations that occur at spills. However, at high temperatures and increased respiration and filtration rates, it is expected that uptake will occur quickly, to relatively high concentration, followed by rapid declines (Meador et al. 1995). At low temperatures, body burdens are likely to be lower, but elimination rates will also be slower. At very low temperatures, some species stop feeding and thus are at lower risk of exposure. For example, elevated levels of PAHs from the *North Cape* oil spill were detected in soft shell clams, oysters, and mussels, but not in quahogs because they stop feeding at 6°C and the water temperature during the spill was 4°C (NOAA et al. 1999).

Physiology

Lipid, carbohydrate, and protein levels are known to vary seasonally in certain aquatic invertebrate species, often associated with reproductive changes (Jovanovich and Marion 1987). Some of these changes in biochemical composition may affect uptake and elimination rates seasonally. Seasonal variation may also result from differences in feeding rates, microbial activity, and various environmental factors (Meador et al. 1995).

Organisms with higher overall lipid content generally exhibit higher levels of uptake or retention of petroleum compounds (NRC 1983). For example, Heras et al. (1992) found that salmon (muscle lipid content of 4.0% wet weight) accumulated higher hydrocarbon concentrations than cod (muscle lipid content of 0.75% wet weight). Jovanovich and Marion (1987) have reported that uptake rates of PAHs in clams peaked when gametogenesis was near completion and decreased during spawning, while elimination rates peaked during spawning. Bender et al. (1986) found that oysters and clams

Document ID: 0.7.19.1897.3

sampled at the high point of lipid and glycogen reserves during their spawning cycles (the fall) had PAH tissue levels that were 2 to 3 times higher than they were when sampled during the spring. High elimination rates during the loss of lipid-rich eggs are consistent with findings that finfish and shellfish tend to accumulate PAHs in tissues with high lipid content because PAHs are strongly hydrophobic (Meador et al. 1995).

Potential variations in PAH uptake and elimination rates in seafood species due to seasonal and physiological variation should be taken into account during spill response. These differences should be considered when designing seafood sampling plans and when comparing analytical results from samples from different species, collected at different times of year, or collected during different stages in the life cycle of the organisms.

Chronic Exposure Stress

Bioaccumulation levels and elimination rates of hydrocarbons for finfish and shellfish may depend on the type and duration of exposure to petroleum products, and the extent to which the organisms have been chronically exposed to other contaminants. Chronic exposure appears to reduce elimination capacity. In fact, there may be two phases of elimination: an initial rapid phase followed by a second slower phase for PAHs that are sequestered in stable compartments of the organism, such as storage lipids (Meador et al. 1995). Some chronic hydrocarbon pollution studies have indicated no significant reductions in PAH levels in tissues over 2-4 months for clams and mussels, even when the animals were moved to cleaner habitats (DiSalvo et al. 1975; Boehm and Quinn 1977). The ratio of liver/muscle concentrations in finfish sometimes can be used as an indicator of the level of chronic PAH contamination at a site. Liver levels represent shorter-term exposure to oil, while muscle levels represent longer-term bioaccumulation. Therefore, lower liver/muscle ratios may indicate decreased efficiency in an organism's ability to biotransform absorbed or ingested oil into compounds that are easily excreted (Hellou 1996).

Other subsistence and recreational seafood organisms

Some organisms that are collected and consumed for subsistence and recreation were not discussed in this section. Examples are octopus, squid, seals, whales, seaweed, and algae. There isn't enough information on these organisms to thoroughly discuss the level of risk they may pose to consumers following an oil spill. It should be noted, however, that if these organisms occur in a spill area and are exposed, restrictions on harvest or consumption advisories might be warranted, depending on contamination and consumption levels.

Summary

- Wild finfish are unlikely to become contaminated or tainted because they typically are either not exposed or are exposed only briefly to the spilled oil and because they rapidly eliminate petroleum compounds taken up. Exceptions may occur if a large amount of fresh, light oil is mixed into the water column or if bottom sediments become contaminated. If nearshore sediments are contaminated, species that spawn in nearshore and shallow waters are more likely to be exposed to spilled oil than pelagic and benthic species.
- Penned finfish are more susceptible to tainting and contamination because they are not able to escape exposure. They are especially at risk if large amounts of oil mix into the water column.

Document ID: 0.7.19.1897.3

- Shellfish are more likely than finfish to become contaminated from spilled oil because they are more vulnerable to exposure and less efficient at metabolizing petroleum compounds once exposed. Shellfish are generally less mobile and have more contact with sediments, which can become contaminated and serve as a long-term source of exposure.
- Among crustaceans, species that burrow are at the highest risk of exposure at spills where bottom sediments are contaminated, followed by species that utilize nearshore and estuarine benthic habitats.
- Bivalves are at high risk of contamination because they are sessile, filter- and deposit- feed, and occur in substrates in shallow subtidal and intertidal areas that are more likely to become contaminated.
- It is generally accepted that uptake and elimination rates both increase with temperature, though study results are somewhat contradictory.
- PAHs tend to accumulate to higher concentrations in lipid-rich tissues and organisms. Seasonal differences in tissue lipid content associated with spawning may influence uptake and elimination rates of PAHs in some marine species.
- Chronic exposure to hydrocarbons in water and sediments may reduce elimination capacity.

Summary of Literature on Uptake and Elimination

Most of the literature on oil and PAH uptake and elimination by marine organisms is based on laboratory studies using the water-soluble fraction or dispersed oil in aqueous exposures, or contaminated sediments. The organisms are typically exposed to a constant concentration for a period of time (often 24 hours for aqueous exposures; 28 days for sediment exposures) and then placed in clean water and monitored for tissue concentrations over time. The rate of elimination is often reported in terms of half-life, that is, the time it takes for the concentration of a compound to decrease by half.

Laboratory aqueous exposure concentrations are often an order of magnitude or two higher than expected at oil spills. At actual oil spills, organisms are more likely to experience spiked exposures in the water: concentrations that are initially high (for a few hours or less) and then rapidly decline as the oil disperses in three dimensions and degrades. Although laboratory exposure conditions often differ from those at actual spills, laboratory tests can be useful indicators of the relative rates of uptake and elimination among different oil compounds and concentrations, species, routes of exposure, and environmental conditions.

Laboratory study results indicate that PAH uptake from water is rapid, especially for finfish and crustaceans, which may be related, in part, to high ventilatory rates (Meador et al. 1995). For example, laboratory experiments have reported tainting after eight hours of exposure of salmon to 0.4 ppm of the water-soluble fraction of a crude oil (Ackman and Heras 1992) and after 4 hours of exposure of Arctic char to 50 ppm of a crude oil (Lockhart and Danell 1992). Dietary uptake from sediments is slower. Studies indicate that PAH uptake rates decrease with increasing molecular weight (Meador et al. 1995).

Elimination rates vary widely, by organism type, species, size, uptake pathway, oil type, temperature, and season. However, some generalizations can be derived from the literature. First, the half-lives of PAHs in organisms increase with molecular weight (Meador et al. 1995). Table II-6 shows this trend for PAHs in bivalves, which have limited ability to metabolize PAHs (the PAHs are listed in order of increasing molecular weight). It is important to note that the more persistent PAHs (with more than three benzene rings) are present in petroleum at very low levels. Elimination rates for

Document ID: 0.7.19.1897.3

finfish, which metabolize PAHs more readily, would be faster than the rates shown in Table II-6. Second, passive release and metabolism of PAHs are slower in chronically exposed animals, as discussed earlier (Meador et al. 1995).

Table II-6. Half-lives of PAHs in bivalves based on laboratory tests of both water and sediment exposures (modified after Meador et al. 1995).

Compound	No. of Tests	Half-life, in days mean (range)
Naphthalene	3	1.6 (0.9-2)
Phenanthrene	6	3.3 (1.7-6.1)
Fluoranthene	6	9.9 (2.0-29.8)
Benzo(a)pyrene	6	12.3 (4.8-16)

Field data on the duration of taint and body burdens is limited to a few, well-studied spills. Table II-7 summarizes the available data by spill and organism type. These case studies show that wild finfish are seldom tainted, and the duration of taint is short (less than one month). Caged salmon, however, are more vulnerable to exposure, and taint may persist longer. At the *Braer* spill, in which a very large amount of a light crude oil was released over 12 days and elevated oil concentrations in water persisted in the vicinity of salmon farms for up to 50 days, the salmon closest to the spill reportedly remained tainted for nearly 200 days after the spill (Whittle et al. 1997).

Tainting of crustaceans has been reported for spills at which a light oil was naturally dispersed into the water column immediately after release. Some of the dispersed oil can mix with suspended sediments and accumulate on the seafloor surface, where lobsters, for example, can come into contact with the oil. It appears that epibenthic crustaceans readily uptake oil from sediments and are tainted at low PAH levels. Petroleum hydrocarbons tend to persist longer in crustaceans than finfish, perhaps partly because they are exposed by both water and sediment pathways. The sediment-associated oil has more of the higher-molecular weight PAHs that are more persistent and are eliminated more slowly (Meador et al. 1995).

Bivalves, particularly filter feeders, are more likely to have elevated levels of PAHs when the oil strands on intertidal beds or mixes into the water column over subtidal beds. Heavily oiled sediments can provide a source of chronic exposure, as at the *Sea Empress* spill where intertidal mussels remained contaminated in one heavily oiled bay for 19 months after the spill (Law et al. 1999). Once exposure ceases, elimination can be completed as rapidly as less than one month. Because bivalves accumulate oil compounds and eliminate them very slowly, they sometimes can be used as to indicate the extent and degree of oil exposure after an oil spill.

Document ID: 0.7.19.1897.3

Table II-7. Presence and duration of taint and tissue contamination with petroleum compounds reported at various oil spills. Refer to Table I-1 for the details on spill location, date, oil type and volume, environmental conditions, and references.

Spill Name	Tissue PAH Concentration (µg/kg or ppb wet weight) and Persistence	Taint Persistence
Finfish		
T/V Sea Empress	Wild salmon: 12-186 Declined "rapidly"	Wild salmon: No taint
T/V Braer	Cod: 1.3-74 Haddock: 8-262 Plaice: 15-184 Whiting: 9-2,650 Lemon sole: 6-1,240 Dab: 25-2,160 All but dab reached background in 1 month; dab in 2 months Caged salmon: up to 14,000; rapid loss to 1,000 in 25 days, reached background in 5 months	Cod: No taint Haddock: 1 month Plaice: Suspect taint 2 months Whiting: No data Lemon sole: No taint Dab: 1 month Caged salmon: 7 months
T/B North Cape	Finfish: 5-1,100; 0 months because no increase over background was observed	All finfish: No taint in 416 samples
Crustaceans		
M/V Kure	Rock crab: 5-350; 0.5 months	Crab: No taint
M/V New Carissa	Dungeness crab: < 15	No sensory testing conducted
T/V Braer	Lobster: 112-1,060; 1 month Velvet crab: 94-308; 2 months Edible crab white meat: 19-281; brown meat: 104-1,390; 12 months for crabs	Lobster: 1 month Edible crab: No taint
T/B North Cape	Lobster: 0-33,150; 2.5-5 months	Lobster: 2.5-5 months
Bivalves		
M/V Kure	Oyster: 264-4,467; 0.5 months	Oyster: No taint
M/V New Carissa	Oyster: 70-1,200; 3 weeks	Oyster: No taint
T/V Sea Empress	Whelk: 50-3,800; 4 months Mussel: up to 19,500; 2.5-5 months Cockle: similar to mussels	Whelk: No taint Mussel: No data
T/V Braer	Whelk: 45-1,130; 12 months Scallop: 223-3,580; 17 months	Whelk: No data Scallop: Suspect taint 2 months
T/B North Cape	Steamer clam: 8,500-18,400; 3 months Oyster: 1,400-13,500; 3 months Mussel: 4,200-24,300; 3 months	Steamer clam: No taint Oyster: No taint Mussel: No taint
Refinery Spill, El Salvador	Oysters: 30,000; <1 month	Oysters: No data
T/V Exxon Valdez	Bivalves from four small areas were above 100; 1 year All other areas < 100	Bivalves: No data

Document ID: 0.7.19.1897.3

Correlation between Taint and Body Burden

The specific compounds responsible for petroleum taint in seafood have not been unequivocally determined. Consequently, results of chemical analysis cannot yet be used to predict presence or absence of taint. Nevertheless, results from recent spills where both chemical and sensory testing have been conducted indicate a high degree correlation between presence of taint and presence of measured petroleum contaminants, or conversely, absence of both. The relationship, as well as tainting threshold, may vary somewhat depending on species, oil type, exposure pathway, and other unknown factors. Within a series of experiments using the same oil type and species, sensory panels can correctly rank the degree of taint with both tissue concentrations and exposure water concentrations. Some reported minimum concentrations of measured oil compounds in tissues that were determined by sensory testing to be tainted include 0.6 ppm for cod (Ernst et al. 1989b), 5 ppm for salmon (Heras et al. 1993), 9 ppm for plaice (Howgate et al. 1977), and 100 ppm in scallops (Motohiro and Iseya 1976). Sometimes it is possible to develop correlations for specific spills once a large enough data set is generated. For example, during the *Braer* spill, taint in caged salmon was readily perceived if the PAH concentration in the flesh was 1,000 ppb or greater (Whittle et al. 1997).

Laboratory studies have reported tainting thresholds in salmon, rainbow trout, scallops, and mussels (Ernst et al. 1989a; Ackman and Heras 1992; Davis et al. 1995; Heras et al. 1992, 1993; Jacques Whitford Environment 1992). The data are difficult to interpret because tissue levels are seldom measured, or they are reported as "ppm oil" rather than specific compounds, such as PAHs. More often, the studies correlate taint with the amount of oil in the exposure water, again usually reported as "ppm oil." These studies might provide some basis for predicting the potential for tainting for the combination of species and oil tested. However, it is not yet possible to make general predictions.

Conceptual Models of Exposure, Uptake, and Elimination

Because conditions change rapidly at oil spills, it is helpful to have conceptual models of the exposure pathways for a range of spill conditions. These conceptual models may help seafood managers in evaluating the risk of significant contamination of seafood and making decisions based on limited on-scene data. Table II-8 summarizes five conceptual models for exposure, uptake, and elimination at oil spills, applied to seafood. These models are based on actual spill data and supported by laboratory research, as cited in the previous sections. Please refer to these sections to find the citations supporting each of the conceptual models. It is important to note that during some spills more than one of the models will apply. Each of these models is briefly discussed.

Document ID: 0.7.19.1897.3

Table II-8. Conceptual framework for seafood exposure to, uptake, and elimination of oil at spills.

Exposure Pathway	Exposure Conditions	Seafood at Risk	Tissue Contaminants	Elimination Rates
Dissolved oil fraction only via the water column	-Relatively calm, so slick does not disperse -Separation of dissolved plume from surface slick -Viscous oils that do not readily disperse -Exposure time is short	-Finfish in the area affected by the dissolved plume -Epibiota and filter feeding infauna where the dissolved plume contacts the bottom	-The more water-soluble compounds will dominate, i.e., the 2- and 3-ringed PAHs	-Most rapid because the compounds are more water-soluble and are quickly lost by diffusion and/or metabolism
Dissolved and particulate oil fractions via the water column and water surface	-Turbulence that mixes the oil as droplets into the water column -Light oils that are readily dispersed -Exposure time is short	-All biota in the water column -Epibiota and filter feeding infauna where the dissolved/ dispersed plume contacts the bottom -Intertidal biota (e.g. oyster/mussel beds)	-Same as the whole oil because particulate oil will dominate over dissolved -Over time heavier fractions will predominate as the more soluble fractions are depleted from the slick	- The range of PAHs in the whole oil is present in tissues; -Elimination slower for 4-5 ringed PAHs than for 2-3 ringed PAHs
Resuspension of contaminated sediments into the water column	-Resuspension of heavily oiled sediments from the shoreline or nearshore sediments -Exposure time is likely to be episodic and related to storms	-Nearshore filter feeders (epibiota and infauna)	-Will follow weathering pattern in the stranded oil -Over time, the less soluble, less degradable compounds will dominate	-Relatively slower rates because of the wide range of PAHs in the oiled sediments; chronic exposures may result in longer persistence even after exposure ends
Contaminated intertidal and subtidal sediments	-Oiled intertidal or subtidal sediments -Chronic exposure	- Infauna and some epibiota that are closely associated with bottom sediments, especially deposit feeders	-Same as above	-Same as above
Ingestion of contaminated food	-Usually occurs where sediments are contaminated -Exposure often chronic	-Predators, scavengers, and omnivorous feeders	-Highly variable and poorly understood	-Highly variable and poorly understood

1. Exposure to the dissolved oil fraction only

This exposure model assumes little or no dispersion of the whole oil into the water column, or that the dispersed oil re-coalesced into surface slicks, leaving behind a dissolved oil plume. Alternately, winds may transport the surface slick in one direction, whereas tidal currents can carry the dissolved plume in another direction. Under most conditions, exposure time to the water-soluble fraction of oil is short (in the range of hours to days) due to rapid dilution, evaporation, etc. Exposure concentrations are usually low (ppb range). Uptake by finfish and shellfish will be rapid and dominated by the most water-soluble compounds. However, elimination will also be rapid. Confounding factors can include longer exposure due to multiple or chronic releases, very slow dilution or flushing rates, and very cold temperatures that reduce metabolic activity of animals. Though many laboratory studies have shown rapid uptake of the water-soluble fraction, there are few examples of seafood harvest closures attributed to this pathway during oil spills, probably because the exposure concentrations are too low or rapidly diluted and do not result in persistent contamination.

Document ID: 0.7.19.1897.3

2. Exposure to dissolved and particulate oil

This exposure model includes dispersed oil droplets that mix into the water column. This behavior could occur with light (low-viscosity) oils, turbulent conditions, or chemically dispersed oil. The total (both dissolved and dispersed) oil concentrations in the water column can be relatively higher (total oil concentrations up to low ppm) than with model 1. Exposure time to such high concentrations, however, is usually very short (in the range of hours to days), as oil concentrations rapidly decline with mixing in three dimensions. Tissue residues may include the full suite of PAHs in the whole oil, not just the water-soluble fraction. Thus, elimination rates are expected to be relatively slower, with the higher molecular weight PAHs having relatively longer half-lives. An example of this type of exposure is the *North Cape* oil spill.

3. Exposure to contaminated sediments re-suspended into the water column

Often, complete cleanup of oiled intertidal or subtidal sediments is not feasible and oil is left to weather and degrade naturally. The oiled sediments (or in some cases, free oil droplets) can be re-suspended during storm events, exposing nearby biota. Filter-feeders are at the greatest risk of exposure. Decline in tissue concentrations of contaminants from this pathway of exposure is likely to be delayed because of repeated exposures, presence of persistent, high-molecular-weight PAHs, and possibly slower overall elimination rates for organisms that are repeatedly exposed. This pathway of exposure has been documented for crude and heavy refined oils stranded on more sheltered shorelines (e.g., *Exxon Valdez* oil spill, *Sea Empress* oil spill).

4. Exposure to contaminated sediments.

Oiled intertidal and subtidal sediments can provide pathways of oil exposure via sediment ingestion to invertebrate deposit feeders, such as bivalves, and sediment grazers, such as shrimp and gastropods. Also, infauna can be exposed to dissolved oil in the sediment porewater, potentially contaminating tissues with the more soluble, lighter-molecular weight compounds. Decline in tissue concentrations will be delayed for organisms that are chronically exposed, and may be slow for the same reasons described in model 3 above. Intertidal sediments are more likely than subtidal sediments to be contaminated. Subtidal sediments are seldom contaminated, and if they are contaminated they are generally at lower concentrations than intertidal sediments. Sorbed oil might be more likely to dissolve, compared to pyrogenic PAHs derived from combustion of fossil fuels that are tightly bound to the sediments. This pathway of exposure has been documented at very few spills (most notably, the *Braer* oil spill). It is primarily associated with chronic pollution.

5. Ingestion of contaminated food.

This exposure model assumes that organisms uptake oil by eating contaminated food, not sediments ingested while feeding. Examples are oil droplet ingestion by copepods that are then eaten by finfish, or crabs feeding on oiled bivalves. Dietary uptake of PAHs is not very efficient, and decreases with increasing molecular weight.

Document ID: 0.7.19.1897.3

III. MONITORING SEAFOOD FOR CONTAMINATION

Section II described information that can help determine the likelihood that spilled oil will expose and contaminate seafood. If it is decided that seafood is at significant risk, the next step is monitoring to determine whether seafood actually is contaminated, and to characterize the extent and degree of contamination. This section provides general guidelines for developing seafood sampling plans and conducting sensory and chemical testing of seafood samples for petroleum contamination.

Developing Seafood Sampling Plans

The first step in developing a sampling plan is defining the questions to be answered. Sampling should not begin before study objectives have been clearly established. Because every oil spill is a unique combination of conditions and the objectives of seafood sampling may vary from spill to spill, there is no standard sampling plan that can be applied to all seafood contamination monitoring studies. Generally, though, any sampling plan to monitor for potential seafood contamination from an oil spill should specify the study area, sampling locations, target species, number of samples to be collected, timing of initial and repeat sampling, sample collection methods and handling procedures, and analyses to be conducted. The statistical design must ensure sufficient statistical power to provide the information needed at the desired level of confidence to support seafood management decisions.

We suggest some general guidelines for designing a seafood-sampling plan below. For more detailed guidelines, see *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories Volume 1: Fish Sampling and Analysis* by the U.S. Environmental Protection Agency (2000a). For more detailed sampling guidelines for sensory testing, see *Guidance on Sensory Testing and Monitoring of Seafood for Presence of Petroleum Taint Following an Oil Spill* (Reilly and York 2001). For general sampling guidance related to oil spills, see Mearns (1995).

Selecting sampling locations

In selecting sampling locations, all likely pathways of oil exposure should be identified (e.g., surface slicks, dispersed or dissolved oil in the water column, submerged oil associated with bottom sediments), as discussed in Section II, so that risks to specific fisheries can be evaluated. Inclusion of commercial, recreational, and subsistence harvest areas should be considered.

Collection of pre-exposure samples from the spill area or samples from appropriate unexposed reference areas is extremely important because they can provide information on background levels of contamination in the spill area. Petroleum hydrocarbons are ubiquitous in environmental samples, so we cannot assume that all petroleum hydrocarbons measured in a sample or all increases over time are a result of an oil spill. Furthermore, monitoring often continues until the level of contamination returns to "background." Reference samples are key to determining the range of background concentrations and the baseline against which changes over time will be evaluated.

The best reference samples are pre-spill samples taken in areas not yet oiled but in the potential path of the oil ("before" can be compared with "after" exposure). If pre-spill sampling is not possible, unexposed reference sites comparable to exposed sites can be selected for sampling. However, site histories and differences in the characteristics of the sites should be carefully evaluated to determine whether there are significant differences between the exposed and reference areas. Often, areas that escape oiling do so because they differ fundamentally from exposed areas (for example, bays that face different directions), and so would not be expected to exhibit the same "background" conditions.

Document ID: 0.7.19.1897.3

Any differences between reference and exposed sites must be considered when analyzing and interpreting results.

National monitoring programs such as NOAA's National Mussel Watch Program can provide valuable pre-spill data for determining historical ranges of background concentrations of PAHs in shellfish at several locations around the country (Mearns et al. 1998, 1999). When available for an area, PAH data from the NOAA Status and Trends Program (including the National Mussel Watch Program) or other monitoring programs may help determine normal background levels and seasonal patterns in contaminant levels.

Selecting target species to be sampled

Evaluating risk to human health from seafood consumption usually is a primary purpose of seafood sampling, so including species harvested commercially, recreationally, and for subsistence use may be important. Species that are present throughout the area of concern may be most appropriate for sampling if results are to be compared spatially or if the results are to be used to make statistical inferences to the entire area.

Hydrocarbon uptake and elimination rates vary widely among species, as described in Section II. Finfish, for example, quickly metabolize and eliminate PAHs. Bivalves generally tend to bioaccumulate most contaminants and often serve as good indicators of the potential extent, degree, and persistence of contamination. On the other hand, some shellfish species stop feeding or passing water over their gills at extreme temperatures and, consequently, may exhibit low uptake rates under certain conditions. Consider such differences when selecting species for monitoring and comparing results among species.

Sampling frequency and duration

Monitoring generally should continue until contaminant levels reach background levels or pre-determined acceptable levels. Periodic sampling before those levels are reached can reveal trends in contaminant levels. Appropriate monitoring frequency and duration will depend on spill conditions, such as oil type and volume spilled, flushing rates of affected water bodies, and the degree of exposure to wave action of contaminated shorelines. Appropriate monitoring frequency and duration will also depend on the species exposed and exposure duration. Finfish generally eliminate hydrocarbons within days or weeks, whereas bivalves may require several weeks or months. Elevated levels of petroleum compounds in bivalves have been detected for years at some sites where high levels of oil persist in adjacent sediments. Time of year should also be considered in some climates because elimination rates may be slower in cold temperatures. Other factors to consider with regard to monitoring frequency are the turnaround time for sample analysis and time required for the evaluation team to meet, interpret the results, and decide on the need for further sampling. Sampling plans may need to be adjusted over time as conditions change and as monitoring results provide new information on the fate of the oil and on which pathways of exposure are significant.

Sample collection and handling

The seafood-sampling plan should specify all details about sample collection. This includes the areas to be sampled, number of samples to be collected from an area (to meet statistical objectives), number of organisms or quantity of tissue to be composited (to meet analytical requirements), size of organisms to be collected, tidal elevations for collection (in the case of intertidal invertebrates), method of marking or recording exact sampling locations, and field notes to be recorded.

Document ID: 0.7.19.1897.3

The sampling plan should also specify how seafood samples should be handled. This includes any field preparation, packaging and temperature requirements (for example, wrapping in foil, keeping in a cooler at 4°C or below, and freezing within a specified period of time), labeling, and any chain-of-custody requirements during transport to the analytical laboratory. (An example chain-of-custody form is included in the appendix). Only live animals should be collected for seafood analysis. The edible portion, which may vary culturally, is usually the portion of interest. Seafood samples collected for sensory testing generally should be handled as they would be during commercial, recreational, or subsistence harvest and transport.

Procedures should be followed to prevent cross-contamination in the field (such as preventing exposure of samples or sampling equipment to exhaust fumes and engine cooling systems on vessels) and to maintain the integrity of the samples. Likewise, good laboratory practices should be employed to prevent contamination of samples during preparation and analysis.

Testing Seafood for Contamination and Tainting

Generally, two different types of evaluations can be conducted after oil spills to determine whether seafood is contaminated. Sensory testing determines whether seafood is tainted, i.e., if it has an off-odor or off-flavor. Chemical analysis determines whether tissues are contaminated with targeted compounds. Detailed methods of chemical analysis can indicate the presence as well as the quantity of specific contaminants in tissues. These results can be used to evaluate risk to human health through consumption of contaminated seafood (as described in Section 5). Summaries of these types of seafood testing are described below.

Sensory evaluation of seafood for presence of petroleum taint

When an oil spill occurs, local seafood resources may be exposed to petroleum compounds that affect their sensory qualities; that is, smell, taste, and appearance. Even when seafood from a spill area is considered acceptable with regard to food-safety, flavor and odor may still be affected, negatively impacting the seafood's palatability, marketability, and economic value. Furthermore, tainted seafood is considered by the U.S. Food and Drug Administration to be adulterated and, therefore, is restricted from trade in interstate commerce.

Overview of sensory testing of seafood

Tainted seafood is defined as containing abnormal odor or flavor not typical of the seafood itself (ISO 1992). Under this definition, the odor or flavor is introduced into the seafood from external sources and excludes any natural by-products from deterioration due to aging during storage, decomposition of fats, proteins, or other components, or due to microbial contamination normally found in seafood. Taint is detected through sensory evaluation, which has been defined as "the scientific discipline used to evoke, measure, analyze and interpret those reactions to characteristics of foods and materials as perceived through the senses of sight, smell, taste, touch and hearing" (Food Technology Sensory Evaluation Division 1981). Humans have relied for centuries on the complex sensations that result from the interaction of our senses to evaluate quality of food, water, and other materials. In more recent times, sensory testing has developed into a formalized, structured, and codified methodology for characterizing and evaluating food, beverages, cosmetics, perfumes, and other commercial products. Sensory evaluation techniques are routinely used commercially in quality control, product development, and research. Sensory testing can be either subjective or objective. Subjective testing measures feelings and biases toward a product rather than the product's attributes. For objective

Document ID: 0.7.19.1897.3

testing, highly trained assessors use the senses to measure product attributes. Testing of seafood for petroleum taint should be completely objective and should be conducted by highly trained analysts.

Objective sensory testing serves as a practical, reliable, and sensitive method for assessing seafood quality. Only human testers can measure most sensory characteristics of food practically, completely, and meaningfully. Though advances continue to be made in developing instrument-based analysis, human senses remain unmatched in their sensitivity for detecting and evaluating organoleptic characteristics of food. The U.S. Food and Drug Administration and NOAA's National Marine Fisheries Service routinely employ sensory evaluation in inspecting seafood quality. Seafood inspectors are essentially sensory analysts, or assessors, who work as expert evaluators in the application of product standards. A major objective of seafood sensory inspection is to evaluate quality with regard to decomposition of fisheries products. Sensory analysis can also provide information on presence of taint from external sources, such as spilled oil and chemicals.

Sensory panels

Objective sensory evaluation of seafood is usually conducted using a panel of trained and experienced analysts. Sensory analysts must be screened for sensitivity and then trained in applying established sensory science methodology. Participation in calibration or "harmonization" workshops ensures uniform application of sensory evaluation criteria for particular types of contaminants, including standard terminology and consensus on levels of intensity of sensory characteristics. Descriptive analyses and references are used to yield results that are consistently accurate and precise.

There are different types of sensory analysts, which function differently and have specific selection, training, and validation requirements. *Trained assessors* are sensory analysts selected and trained to perform a specific task. *Expert assessors* are the most highly trained and experienced category of sensory analyst. Expert assessors generally evaluate product full-time, function independently, and often are used in quality control and product development. Examples of products evaluated by expert sensory assessors include wine, tea, coffee, and seafood. Through extensive standardized training and experience with sensory methodology, these expert assessors have become extremely objective and evaluate quality with a high degree of accuracy and precision. Seafood inspectors fall into the category of expert assessors, and can make consistent and repeatable sensory assessments of quality characteristics of seafood as they relate to grade level or decisions to accept or reject product.

The number of panelists needed depends on the level of expertise and experience of the analysts used. For panels of expert assessors, such as NMFS and FDA seafood inspectors, usually only three to five analysts are needed. If less experienced analysts are used, a larger number of panelists is recommended. Whenever possible, use of expert seafood assessors, such as seafood inspectors, is recommended for evaluation of seafood for presence of petroleum taint. Extensive product knowledge and experience enable seafood inspectors to very accurately distinguish variations related to product processing, storage, deterioration, etc. from taint due to external sources. Some seafood inspectors for NMFS and FDA have had specialized training for detecting petroleum taint in seafood and experience evaluating seafood samples at oil spills. If called upon, these specialized inspectors are available to conduct sensory evaluation of seafood during spill events.

Sensory evaluation procedures

Applied as a science, sensory evaluation should be conducted under specific, highly controlled conditions in order to prevent extraneous influences in the testing environment from affecting panelists' sensory responses. Accordingly, sensory testing is best conducted in facilities specifically designed for sensory testing. The NMFS Seafood Inspection Branch maintains several such laboratories around the country. Seafood samples collected during a spill event can be shipped to these laboratories for sensory evaluation. In most cases, NMFS and FDA recommend that samples be shipped and evaluated in the same manner as they normally are shipped and sold (i.e., fresh, live, frozen). When this is not pos-

Document ID: 0.7.19.1897.3

sible, as may be the case for oil spills in very remote areas, sensory analysts can conduct evaluations at the scene of an incident.

All sensory testing should be conducted under the supervision of a sensory professional, who designs and implements the sensory testing procedure. A trained "facilitator" should coordinate sensory analysis . The facilitator conducts the testing, including receiving, preparing, and presenting samples to the expert sensory panel, and collecting the resulting data in a scientific and unbiased manner. All of these steps should be conducted according to standardized procedures under highly controlled conditions. Suspect samples are presented to assessors in blind tests, along with control or reference samples. Samples are first smelled raw, then smelled cooked, and finally tasted by each panelist independently to determine whether petroleum taint is present. A sensory professional statistically analyzes panelist's responses to determine whether samples pass or fail with regard to presence of petroleum taint. These results, in turn, help seafood managers determine whether restrictions are needed on seafood harvest or marketing from the spill area due to tainting.

In that we are not certain which compounds in petroleum are responsible for taint perceived by humans, chemical analysis cannot yet substitute for sensory testing in determining whether a taint is present. It has been suggested that the principal components of crude and refined oils responsible for tainting include the phenols, dibenzothiophenes, naphthenic acids, mercaptans, tetradecanes, and methylated naphthalenes (GESAMP 1977). The human olfactory system generally is very sensitive to phenolic and sulfur compounds, even though they are minor components of oil.

In 2001, NOAA published a technical guidance document on appropriate sensory methodology to objectively assess seafood for the presence of petroleum taint. Written by sensory scientists with NOAA's National Marine Fisheries Service Seafood Inspection Program and Canada's Food Inspection Agency, in cooperation with the U.S. Food and Drug Administration, *Guidance on Testing and Monitoring of Seafood for Presence of Petroleum Taint Following an Oil Spill* comprehensively describes recommended standard procedures, including collection, preservation, and transport of seafood samples, for sensory evaluation. The guidance is intended to assist in conducting scientifically sound and legally defensible sensory tests on seafood during oil spill response, with adequate and appropriate quality control.

Chemical testing techniques for petroleum contaminants in seafood

Chemical testing of seafood often is conducted after an oil spill to determine whether seafood tissues are contaminated with petroleum compounds. Both detailed and screening methods of analysis can be employed. Below, we summarize methods typically used after past oil spills, including some of their advantages and disadvantages.

Detailed methods of chemical analysis: gas chromatography/mass spectrometry

Detailed chemical analysis of seafood after oil spills typically is conducted using gas chromatography and mass spectrometry (GC/MS), which measures individual PAHs at very low detection levels and provides a PAH pattern (or fingerprint) to compare to that of the source oil. Prior to analysis, hydrocarbons are extracted from seafood tissue samples and the extract is split into three fractions: 1) the saturated hydrocarbons fraction (f_1), containing the n-alkanes, isoprenoids, steranes and triterpanes; 2) the aromatic hydrocarbon fraction (f_2), containing the PAHs and sulfur heterocyclics; and 3) the polar hydrocarbon fraction (f_3), containing the nitrogen heterocyclic compounds. Recovery standards appropriate to each fraction are added (Lauenstein and Cantillo 1993).

The PAHs in the f_2 fraction generally are of greatest concern with regard to risk to human health. The gas chromatograph separates targeted PAH compounds yielding a retention time that, in combination with the mass spectra from the mass spectrometer, enable detailed identification of individual compounds by their ion masses. The method often used is usually referred to as "Modi-

Document ID: 0.7.19.1897.3

fied" EPA Method 8270, which is EPA Method 8270 for semi-volatile compounds modified to include quantification of the alkyl-substituted PAH homologues, in addition to the standard PAH "priority pollutants." Table II-3 lists the PAHs and their alkyl homologues usually included in this analysis. In oil, alkylated homologues of PAHs are more predominant than parent PAH compounds, often by an order of magnitude. This is in contrast to pyrogenic (combustion) and other potential PAH sources. The detailed chemical fingerprint provided by GC/MS analysis enables differentiation among sources of PAHs found in the sample. Contamination from a specific spill can be distinguished from background sources of contamination, such as PAHs derived from combustion sources. GC/MS can also measure analytes other than PAHs to help with fingerprint analysis of oil or to track oil weathering. The GC/MS can be run in the selected ion monitoring (SIM) mode, rather than the full-scan mode, to increase the minimum detection levels (MDL) of the individual parent and selected homologue PAHs by a factor of 10 to 40. Minimum detection levels for individual PAHs are very low, in the range of parts per billion (ng/g) in tissue. The quantitative results for specific, targeted PAHs can be used to assess whether levels detected pose a risk to human health through seafood consumption.

Normal turnaround time for analysis of tissue samples for PAHs is approximately two weeks. Fast turnaround time is approximately three days for a batch of samples. Costs for GC/MS-SIM analysis of tissues are relatively high, starting from about $750 per sample, plus premiums of 50-100% for fast turnaround. The sample-processing rate depends on the throughput capabilities of the laboratory and the degree of quality control (QC) of the data before the results are released, ranging from approximately 20 to a maximum of 100 samples per week.

Data Reporting and Interpretation

The importance of data reporting and interpretation should not be underestimated in planning seafood safety monitoring programs after oil spills. Some simple steps can be taken to help avoid confusion and prevent incorrect conclusions. For example, the analytical laboratory should include at least the following information for all analytical data reported:

Sample "Header" Information

- *Sample Name or Field ID: the sample name or number assigned by the sampler*
- *Sample Type: e.g., sample, field blank, trip blank, procedural blank, QC*
- *Batch No.: analytical batch number (so samples run as a batch can be identified, particularly if problems are found with a batch run)*
- *Matrix: e.g., water, sediment, tissue, oil*
- *Percent Moisture: for tissue and sediment samples*
- *Sample Size: weight or volume of sample used for analysis*
- *Collection Date: date the sample was collected*
- *Extraction Date: date the sample was extracted*
- *Analysis Date: date the sample was analyzed*
- *Analysis Method: EPA Method or other description*
- *Surrogate Corrected?: Are the reported concentrations corrected for surrogate recovery?*
- *Method Detection Limit: the minimum detection level*
- *Units: units in which the concentration is reported, including whether concentrations are wet weight or dry weight (for tissue)*

Document ID: 0.7.19.1897.3

Analyte Data

- *Individual and Total PAH concentrations*
- *Surrogate Recovery (%): for every sample*
- *Key to Data Qualifiers: The lab should include a key to any qualifiers used to flag reported values that have some kind of data accuracy issue. For example, two standard qualifiers used under the USEPA Contract Laboratory Program guidelines (USEPA 1994) are:*
- *U = the analyte was analyzed for, but was not detected above the reported sample quantitation limit*
- *J = the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample*

Analysis of the source oil, if available, is needed to enable fingerprint comparisons. Only expert petroleum hydrocarbon chemists should interpret fingerprints because the complex processes of oil weathering and uptake result in variable PAH patterns in organisms (Sauer and Boehm 1995). Also, patterns can be difficult to interpret in samples collected from areas with high background levels of contamination.

Caution is advised when comparing analytical results for samples of different types, or samples collected from different areas or at different times. Before drawing conclusions, consider any differences in the analyses conducted or the way the data are reported. Examples of differences to watch for include:

- the units in which results are reported, and whether reported concentrations are dry or wet weight;
- whether the lists of analytes and minimum detection limits for individual PAHs are the same;
- whether reported concentrations have been corrected for surrogate recovery; and
- whether reported concentrations have been lipid-normalized. As described in Section II, PAH uptake and retention tend to increase with the increasing lipid content of tissues. Consequently, differences in lipid content may need to be considered when comparing and interpreting analytical results over time or among different organisms.

Rapid screening methods of analysis

Rapid, low-cost analytical methods, generally known as screening methods, can be employed to identify contaminated samples and prioritize them for detailed analysis. Detailed methods of analysis for PAHs in tissue are time-consuming and expensive. The large number of samples often collected after an oil spill can quickly overwhelm laboratory capacity and strain resources. Screening methods of analysis can rapidly process large numbers of samples to yield semi-quantitative estimates of contaminant concentrations and allow ranking of samples by degree of contamination. Used in a tiered approach, screening methods can identify the most contaminated samples, prioritizing or reducing the number of samples that need to be processed by detailed analytical techniques, such as GC/MS.

For example, in response to the need to analyze large numbers of subsistence seafood samples collected after the *Exxon Valdez* oil spill in Prince William Sound, Alaska, NOAA's Northwest Fisheries Science Center used reverse-phase, high performance liquid chromatography (HPLC) with fluorescence detection to screen for metabolites of aromatic compounds in finfish bile (Krahn et al. 1982, 1984, 1986, 1992, 1993a, 1993b, 1993d). Finfish rapidly metabolize aromatic compounds and concentrate the resulting metabolites in bile for excretion, often at concentrations that are orders of magnitude greater than those in edible tissue. Using this rapid, low-cost method, hundreds of finfish tissue samples were screened for indication of exposure to petroleum contaminants, enabling GC/MS analy-

Document ID: 0.7.19.1897.3

ses to be focused on selected samples to confirm presence and quantities of individual contaminants. Hufnagle et al. (1999) has developed an HPLC/UV fluorescence screening method for rapidly measuring aromatic compounds in invertebrate tissues. This screening method was used successfully on lobster samples collected after the *North Cape* oil spill off the coast of Rhode Island in 1996. For details on a rapid screening method for parent aromatic compounds in sediments see Krahn et al. (1991, 1993c).

Screening analyses, such as the HPLC/fluorescence method described above, generally can be completed in rapid turnaround time (within 24 hours) and can be conducted on a research vessel or onshore lab. Rapid availability of results enables sampling modifications based on indications of exposure. This can be very helpful during the critical early phases of an oil spill response, when decisions regarding closing or otherwise restricting seafood harvest may be made.

The utility of HPLC/fluorescence and other screening methods, however, is more limited than detailed methods of analysis. For example, though it may be possible to recognize chromatographic patterns associated with characteristic classes of petroleum products, HPLC/fluorescence screening does not produce a detailed "fingerprint" similar to the results acquired from GC/MS. Consequently, HPLC/fluorescence usually will not enable differentiation between background contamination sources and the spilled oil, especially in very polluted areas. Since HPLC/fluorescence screening does not quantify individual aromatic compounds, the results cannot be used to assess risk to human health from consumption of contaminated seafood. Furthermore, measurement of fluorescent aromatic compounds in bile is not a standard analysis, limiting temporal and spatial comparisons using historical data sets. Lastly, HPLC/fluorescence screening for fluorescent aromatic compounds in bile is a specialized technique, and laboratory availability and expertise needed to conduct the analyses reliably may be limited.

Water Monitoring

Water samples often are collected and analyzed as part of the initial spill response and assessment. Seafood safety managers can use these results to help estimate the extent and duration of seafood exposure to oil in the water column. Monitoring of water concentrations may also be important if water-quality criteria are applied as a condition for re-opening a closed fishery or removing other harvest restrictions.

Oil concentrations in the water column generally peak early after an oil spill and, in most cases, rapidly decline to background levels within days to a week, as was the case for example at the *New Carissa* oil spill (Payne and Driskell 1999). Accordingly, if water sampling is to be conducted, initial sampling should commence very soon after an oil spill occurs. Oil may persist longer than usual in the water column if there are multiple or ongoing oil releases, if the released volume is extraordinarily large, or if large volumes of oil are physically dispersed. After the *Braer* oil spill, for example, elevated oil concentrations were detected in the water column as long as 50 days after release (Davies et al. 1997). Dissolved and dispersed oil plumes in the water column are driven by currents and so may have a very different spatial distribution than surface slicks, which are driven primarily by wind.

Under the authority of the Clean Water Act (63 FR 68354-68364), EPA has issued national recommended water-quality criteria for priority toxic pollutants to be used by states and tribes in adopting water quality standards. EPA has issued water-quality criteria for protection against human health effects for three mono-aromatic hydrocarbons and eight PAHs (listed in Table III-1). These particular compounds, however, are present in crude oils and refined products at very low levels and constitute a tiny percentage of the PAHs normally detected in water samples after an oil spill. None of the water quality criteria to protect aquatic communities (both freshwater and saltwater) issued by EPA are for PAHs. EPA has issued recommended water quality criteria for organoleptic effects for 23 chemicals, though not for any of the compounds present in petroleum products. Some states have established state water quality standards for PAHs in their coastal waters.

Document ID: 0.7.19.1897.3

Table III-1. National recommended water quality criteria for priority toxic pollutants for protection against human health effects (63 FR 68354).

PAH Priority Pollutant	Human health criteria for consumption of Water + Organism (μg/L)	Human health criteria for consumption of Organism Only (μg/L)
Benzo(a)anthracene	0.0044	0.049
Benzo(a)pyrene	0.0044	0.049
Benzo(b)fluoranthene	0.0044	0.049
Benzo(k)fluoranthene	0.0044	0.049
Dibenzo(a)anthracene	0.0044	0.049
Fluoranthene	300	370
Fluorene	1,300	14,000

Sediment Monitoring

Sediment monitoring can be included as part of a post-spill monitoring program to determine whether sediments may be a potential chronic source of oil exposure to adjacent seafood collection sites, particularly at intertidal sites where bivalves are harvested. Sediment sampling also may facilitate fingerprint analysis of PAHs in tissues by providing the PAH pattern in contaminated sediments, which may be different than the PAH pattern in the fresh source oil. It is important to recognize, however, that sediments often contain high levels of background PAH contamination, particularly in urban areas and harbors. PAHs and other contaminants detected may not be related to a particular oil spill. Also, characterization of sediment contamination can be difficult because of the inherent heterogeneity of intertidal sediments over space, depth, and time.

There are no national sediment quality criteria for PAHs in marine or freshwater sediments. Some states have established sediment quality standards and cleanup screening levels to prevent adverse biological effects. How these standards would relate to seafood adulteration or safety issues is unclear.

Document ID: 0.7.19.1897.3

IV. SEAFOOD RISK ASSESSMENT

Several different endpoints can be considered when assessing risks posed to human health from consuming contaminated seafood. These include both carcinogenic and non-carcinogenic effects to the general population, as well as to particularly susceptible segments of the population such as children, pregnant women, and subsistence seafood consumers. Human epidemiological studies, when available, and laboratory studies involving animals are used to assess the likely effects of contaminants at various exposure levels.

As discussed in Section II, petroleum oils are composed of complex and variable mixtures of hundreds of different hydrocarbon compounds. Of these, polycyclic aromatic hydrocarbons (PAHs) are typically of greatest concern with regard to health effects because of their relative persistence and carcinogenicity. Evidence from occupational studies of workers exposed to mixtures of PAHs indicates that many of these compounds may be carcinogenic to humans. Individual PAHs that are considered to be probable human carcinogens include benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene (IRIS 1994). Most of the data gathered from laboratory studies provides information on carcinogenic effects of lifetime exposure to PAHs. Information on non-carcinogenic effects is limited. Consequently, cancer generally is the primary endpoint considered when assessing potential risks to human health from consumption of seafood from an oil spill area.

Overview of Cancer Risk Calculations for PAHs in Seafood

Most seafood risk assessments conducted after oil spills in the U.S. have followed an approach used by the U.S. Food and Drug Administration (USFDA) in 1990 after the *Exxon Valdez* oil spill in Prince William Sound, Alaska. At the request of the Alaska Oil Spill Health Task Force, a group established after the spill to conduct a survey and assess the impact of the spill on subsistence food supplies, USFDA conducted a risk assessment and provided an advisory opinion on the safety of aromatic hydrocarbon residues in subsistence seafood in the spill area (Bolger et al. 1996; Bolger and Carrington 1999). This approach uses a set of calculations to determine finfish or shellfish PAH tissue concentrations, expressed in benzo[a]pyrene (BaP) equivalents (µg/kg), above which an acceptable risk level for cancer is exceeded. The values for several variables in these calculations can be adjusted on a case-by-case basis, depending on local seafood consumption levels of the exposed population, average body weight of the exposed population, estimates of exposure time for a particular spill, and the cancer risk level deemed acceptable. This approach to calculating seafood advisory or action levels has since been used after several other oil spills, including the *North Cape* spill in Rhode Island, the *Julie N* spill in Maine, the *Kure* spill in California, and the *New Carissa* spill in Oregon.

The basic equation and input parameters are described below:

$$\text{Advisory or Action level (µg/kg) BaP equivalents} = \frac{(RL)(BW)(AT)}{(SF)(ED)(CR)}$$

Acceptable Risk Level (RL): The acceptable risk level is the maximum level of individual lifetime carcinogenic risk that is considered "acceptable" by risk managers. The typical RL used in cancer risk calculations is 1×10^{-6}. In the case of PAHs, this implies that exposure to PAHs in seafood below a specified tissue concentration level at a defined consumption rate over the defined exposure period would yield a lifetime cancer risk of no greater than 1 in 1,000,000. Some states consider higher risk levels, such as 1×10^{-5} (a lifetime cancer risk of no greater than 1 in 100,000) to be acceptable.

Document ID: 0.7.19.1897.3

A risk level of 1 x 10^{-6} was used in the risk calculations done by USFDA for the Exxon Valdez oil spill, as well as those done by the State of Rhode Island for the *North Cape* oil spill, the State of California for the *Kure* oil spill, and the State of Oregon for the *New Carissa* oil spill. A risk level of 1 x 10^{-5} was used in the risk assessment conducted by the State of Maine for the Julie N oil spill and the State of Alaska for the *Kuroshima* oil spill.

Body Weight (BW): The value for body weight used in risk calculations is intended to represent the body weight of an individual consumer (kg). An average body weight of 60-70 kg (132-154 lb) is often used for adults in the general U.S. population. If a particular group of at-risk consumers is considered in a risk calculation, alternative body weights may be used. For instance, children or subsistence harvesters may have lower average body weights than 60-70 kg. Because allowable consumption limits at a certain seafood tissue concentration are linearly related to body weight, risk assessors should consider the actual body weights of the targeted population.

Averaging Time (AT): A typical averaging time value used in cancer risk calculations is 70 years. This value represents the average length of a human lifetime, which is the time period of interest for examining cancer as an endpoint.

BaP Cancer Slope Factor (SF): The cancer slope factor, or cancer potency (q^{1}*), is derived from dose-response data obtained from human epidemiological and animal toxicity studies (USEPA 2000b). High doses of the contaminant of interest are often used in dose-response studies, and extrapolation of the data to lower doses that may be encountered by the general population is often necessary. Cancer potency is estimated as the 95-percent upper confidence limit of the slope of the dose-response curve in the low-dose region. This method provides a conservative estimate of the potential cancer risk of a contaminant. The actual risk may be significantly lower. The USEPA (2000b) has used a cancer potency factor of 7.3 per mg/kg/day to calculate monthly consumption limits for the general population over a range of PAH tissue concentrations in finfish. This same potency value was used in cancer risk calculations for the *New Carissa* and *Julie N* oil spills. A cancer potency factor of 9.5 mg/kg/day, established by the State of California EPA, was used to calculate carcinogenic risk associated with consuming contaminated shellfish following the *Kure* spill in California.

Exposure Duration (ED): The exposure duration is the time period over which an individual is exposed to a contaminant. When calculating risks associated with seafood consumption following an oil spill, the exposure duration is equivalent to the time interval over which an individual consumes contaminated seafood harvested from the spill zone. Exposure duration varies depending on spill conditions. The default assumption for risk assessments generally is 70 years, the average time for a lifetime exposure. Unlike some other contaminants, however, PAH concentrations in contaminated finfish and shellfish decrease over time and exposure levels will decline, eventually dropping to background concentrations. Consequently, exposure periods much shorter than a 70-year lifetime exposure assumption are more realistic and appropriate for PAHs, particularly for oil spills because they are typically very short-term, pulsed contamination events.

An exposure duration of two years was assumed for the risk calculations for the *New Carissa* and *Kure* oil spills. An exposure duration of five years was used for the *North Cape* oil spill calculations (Mauseth et al. 1997). More conservative exposure assumptions have been made at other spills. Both ten- and 30-year exposure durations were used in risk calculations for the *Julie N* oil spill. Consumption risks for the *Exxon Valdez* spill were calculated for both ten and 70-year (lifetime) exposure durations.

Seafood Consumption Rate (CR): Typically, consumption rates are calculated for average and upper-end consumers and correspond to the quantity of seafood (units expressed as grams) that an individual may consume per day. The values used for serving sizes and frequency of seafood meals are often adjusted, due to the significant variability in seafood consumption among individuals and particular groups.

Document ID: 0.7.19.1897.3

Data from national surveys, such as the Continuing Survey of Food Intake by Individuals (CSFII) conducted by USDA, can be used to help estimate national seafood consumption rates. The consumption rate typically used for the average U.S. seafood consumer is 7.5 grams/person/day. This value is derived from the assumption that an average seafood consumer eats one 8-ounce (227 grams) seafood meal (such as a fish fillet) once a month (per 70 kg consumer body weight for adults) (USEPA 2000b).

The carcinogenic risk assessment conducted after the *Exxon Valdez* oil spill used seafood consumption rates calculated from subsistence harvest survey data (Bolger et al. 1996; Bolger and Carrington 1999). Residents of Alaska Native communities rely on local finfish and shellfish resources for significant portions of their diets. The Alaska Department of Fish and Game Division of Subsistence Consumption had conducted household harvest studies before the spill (Fall 1999; Scott et al. 1992). Subsistence consumption rates were estimated to be 89 grams/person/day for salmon, 52 grams/person/day for other finfish, 21 grams/person/day for crustaceans, and 2 grams/person/day for bivalve mollusks. Note that these consumption levels are much higher than those derived for the general U.S. population from national survey data, described above.

The *New Carissa* and *Kure* risk assessments used shellfish consumption rates for the average commercial product consumer of 7.5 g/day (Challenger and Mauseth 1998; Gilroy 2000). An upper-end consumption rate of 32.5 g/day (one meal/week) for the *New Carissa* risk assessment was based on a reasonable estimate for local recreational harvesters/consumers (Gilroy 2000). Upper-end consumption rates of 50g/day and 30g/day were used for the *Kure* and *North Cape* risk assessments, respectively (Mauseth et al. 1997). For the *Julie N* oil spill, average consumption rates of lobster were assumed to be 13.6 g/day.

Seafood Advisory and Action Levels from Previous U.S. Oil Spills

The action or advisory levels resulting from cancer risk calculations differ among spills, depending on the assumptions made and input values selected. At the *New Carissa* oil spill, the Oregon Health Division calculated action levels for average and upper-end shellfish consumers of 45 ppb BaP equivalents (BaPE) and 10 ppb BaPE, respectively (Gilroy 2000). Action levels derived by the California Department of Health Services for average and upper-end shellfish consumers following the *Kure* spill were 34 ppb BaPE and 5 ppb BaPE, respectively. At the *North Cape* oil spill, the Rhode Island Department of Health essentially applied a BaPE criterion of 20 ppb for the maximally exposed lobster consumer over the five-year exposure duration. Action levels calculated by the Maine Bureau of Health for lobster consumption after the *Julie N* oil spill for ten and 30- year exposure durations were 50 ppb and 16 ppb BaPE, respectively. Advisory levels for subsistence consumers after the *Exxon Valdez* oil spill, assuming a ten-year exposure period, were three ppb BaPE for salmon, five ppb BaPE for finfish, 11 ppb BaPE for crustaceans, and 120 ppb BaPE for bivalve mollusks. Advisory levels based on a lifetime exposure assumption were approximately an order of magnitude lower. None of the finfish or shellfish samples collected from harvesting areas near Prince William Sound exceeded these advisory levels. Interestingly, the upper-bound lifetime cancer risk for Alaskan subsistence seafood consumers eating the most contaminated bivalve mollusks from the spill area was calculated to be two orders of magnitude lower than the lifetime risk calculated for consumers of locally smoked salmon (Bolger et al. 1996).

At several of these spills, the calculated action levels were used as recommended levels for reopening harvest of closed seafood fisheries. For example, at the *New Carissa* oil spill, shellfish were considered safe if all samples contained less than 10 ppb BaP equivalents. If any shellfish tissue levels were above 45 ppb BaP equivalents, shellfish in those areas would be considered unsafe, and further

Document ID: 0.7.19.1897.3

monitoring considered necessary. If samples contained more than 10 ppb but less than 45 ppb BaP equivalents, the need for further monitoring would be assessed on a case-by-case basis. A similar tiered approach was used at the *Kure* oil spill. If all samples contained less than 5 ppb BaP equivalents, shellfish beds could be reopened. If any samples contained between 5 and 34 ppb BaP equivalents, the need for further action before reopening would be assessed. If any samples contained more than 34 ppb BaP equivalents, additional sampling and environmental monitoring prior to reopening would be considered.

The Equivalency Approach for Risk Assessment

The equivalency approach used in relative cancer risk assessment is a method used for assessing the risk of exposure to a mixture of several different compounds that are related in terms of chemical and biological activity. Rather than calculating individual risks for each compound, one component of known potency is used as a standard. Concentrations of each of the other compounds are adjusted based on their estimated potency relative to the standard, to calculate an equivalent concentration for the standard. Summing the equivalent concentrations yields a single number from which the cancer risk can be estimated (ICF-Clements 1988; Bolger and Carrington 1999).

This toxicity equivalency approach has been widely used for mixtures of dioxins and furans, for example. The relative potencies of individual dioxin and furan compounds are expressed in terms of 2,3,7,8-tetra-chlorodibenzo-*p*-dioxin (2,3,7,8-TCDD) equivalents. 2,3,7,8-TCDD was chosen as the standard by which the potency of individual dioxin and furan compounds are estimated because most laboratory studies on the effects of dioxins have been conducted using 2,3,7,8-TCDD. Data are more limited on the effects of other congeners. The same approach can be used with petroleum compounds, which also occur in complex mixtures.

BaP equivalency approach for PAH contamination

Bolger and Carrington (1999) provide a good summary of the rationale for using an equivalency approach to risk assessment for PAHs. Toxicological data available for BaP are much better than data available for any of the other PAHs. Though there is not adequate data to assess risks for individual PAHs, there is sufficient study data for several compounds to enable approximation of cancer potencies relative to BaP. The equivalency approach thereby relies most heavily on data considered to be the most sound and least likely to need revision. Though the cancer risk calculated by this method is an estimate, it is more reasonable than estimates obtained either by ignoring all but a few well-studied compounds or by assuming all congeners have equivalent potencies. On the other hand, compounds for which there isn't enough toxicity data to calculate a cancer potency relative to BaP are omitted from the total, even though some of these compounds may contribute to carcinogenicity. As can be seen from the lists in Table IV-1, few of the PAH compounds typically measured (see Table II-3) are included in the BaP equivalency total. Furthermore, the PAHs for which cancer potencies relative to BaP have been calculated occur predominately in pyrogenic rather than petrogenic sources.

The potencies relative to BaP of other PAHs are based primarily on animal bioassay studies. Estimates of the potencies can differ depending on the studies selected to derive them. For instance, ICF-Clements (1988) incorporated data into their potency model only if BaP was tested in the same bioassay system as the other PAHs, in the same laboratory, and at the same time. Different mathematical models also may yield different potencies. Examples of potencies for PAHs relative to BaP used or suggested by various agencies and researchers are listed in Table IV-1. Most of these estimates are similar, though some differ by as much as an order of magnitude.

Document ID: 0.7.19.1897.3

Table IV-1. Relative PAH potency estimates derived from various sources.

	Relative PAH Potency				
Compound	**ICF/EPA[a]**	**USEPA[b]**	**FDA[c]**	**CA EPA[d]**	**Nisbet & Lagoy[e]**
Benzo[a]pyrene	1.0	1.0	1.00	1.00	1
Dibenzo[a,h]anthracene	1.11	1.0	1.05	0.36	5
Indeno[1,2,3-c,d]pyrene	0.232	0.1	0.25	0.10	0.1
Pyrene	0.081		0.13*		0.001
Benzo[b]fluoranthene	0.140	0.1	0.11	0.10	0.1
Benzo[k]fluoranthene	0.066	0.01	0.07	0.10	0.1
Benzo[g,h,i]perylene	0.022		0.03		0.01
Fluoranthene			0.02*		0.001
Benz[a]anthracene	0.145	0.1	0.014	0.10	0.1
Chrysene	0.0044	0.001	0.013	0.01	0.01
Anthanthrene	0.320**				
Benzo[j]fluoranthene	0.061				
Benzo[e]pyrene	0.004				
Cyclopentadieno[c,d]-pyrene	0.023				
Anthracene					0.01
Acenaphthene					0.001
Acenaphthylene					0.001
Fluorene					0.001
2-Methylnaphthalene					0.001
Naphthalene					0.001
Phenanthrene					0.001

a ICF-Clements Associates (1988).

** Identified in Nisbet and LaGoy (1992) as anthracene.

b U.S. Environmental Protection Agency (1993).

c U.S. Food and Drug Administration, Contaminants Standards Monitoring and Programs Branch, Center for Food Safety and Applied Nutrition (Bolger et al. 1996)

* Division of Mathematics, Center for Food Safety and Applied Nutrition.

d California Environmental Protection Agency (1997).

e Nisbet and LaGoy (1992).

Equivalency calculations

To estimate the total amount of PAHs in a sample, it is first necessary to calculate the weighted potency for each compound by multiplying the relative potency (see Table IV-1) of the compound by the concentration (wet weight) of that compound in the tissue sample. The products of these calculations can then be summed and added to the total amount of BaP in the sample (the product of the tissue concentration of BaP multiplied by a potency of 1.0) to estimate the total concentration of BaP equivalents.

Document ID: 0.7.19.1897.3

The equation is shown below:

$$T_{PAH} = \sum_{j=1}^{n} R_j y_j + x$$

The variables are defined as follows:

T_{PAH} = total PAH exposure
n = the total number of indicator PAHs exclusive of BaP
y_j = exposure to the jth indicator PAH
R_j = relative potency of the jth indicator PAH compared to BaP
x = exposure to BaP

The assumption that exposure to several carcinogenic PAHs in a mixture will have the same carcinogenic effect as exposure to each compound separately at the same dose ("dose additivity assumption") is reasonable because most PAHs appear to metabolize to similar reactive derivatives that produce similar histological effects (ICF-Clements 1988).

Human Consumption Rate Assumptions

Ideally, risk assessments should be based on actual seafood consumption levels for the exposed population rather than default values, such as national averages for consumption rates. Unfortunately, data on seafood consumption levels may not be readily available for all consumer groups. Because seafood advisories or harvest restrictions often are based on cancer risk calculations, it is important to understand how consumption rate assumptions affect cancer risk calculations and, therefore, may affect seafood management decisions after a spill.

Groups of consumers that may be impacted by contaminated seafood include:

- Consumers of commercially harvested seafood;
- Consumers of recreationally harvested seafood; and
- Subsistence fishers and harvesters and their families and communities.

Consumption estimates for consumers of commercially harvested seafood

Consumers of commercially sold products often are not members of the local population in the spill region where the seafood is harvested, therefore national seafood consumption data may be appropriate for deriving consumption estimates to use in cancer risk calculations for these consumers. As summarized by USEPA (2000b), various surveys have reported mean seafood consumption rates for the general U.S. population ranging from 6.5 - 20.1 g/day, and 95th percentile consumption rates ranging from 41.7 – 102 g/day. Rates were based on consumption of commercial and recreational freshwater, saltwater, and estuarine seafood. Before using rates within these ranges for any actual risk assessment calculations, it is important to refer to the original data sources. Closures of commercial fisheries and aquaculture have occurred following several recent oil spills, including the *Exxon Valdez*, *Kure*, *North Cape*, *Julie N*, and *New Carissa*.

Document ID: 0.7.19.1897.3

Consumption estimates for consumers of seafood harvested recreationally or for subsistence use

Consumers of seafood harvested recreationally or for subsistence use are generally of greater concern than the general population when estimating risk because they tend to have higher seafood consumption rates and rely more heavily on local seafood resources for sources of protein. Consequently, these seafood consumers may be at greater risk of health effects than the general population. National average consumption rates may underestimate their exposure. On the other hand, overestimates of their consumption rates may result in unnecessarily conservative advisories or harvest restrictions, limiting use of an important food source, with concomitant detrimental health, economic and cultural consequences.

For these reasons, we do not recommend using national survey data to develop local risk assessments if more accurate local seafood consumption information is available or can be collected and analyzed in a reasonable time frame. Data sources that can provide useful information on community consumption habits include:

Creel surveys: Creel surveys are conducted by state fish and wildlife management agencies, and consist of on-site interviews of fishers. Information is collected on species, sizes, and quantities of fish caught and taken home.

Fishing license surveys: Although demographic information on the licenses is limited, a record of names, addresses, license purchase locations, and duration of fishing seasons may be available, enabling consumption surveys to be conducted through the mail.

Subsistence surveys: Some state agencies conduct periodic subsistence surveys, such as the baseline research conducted by the Division of Subsistence of the Alaska Department of Fish and Game on subsistence fish and wildlife use by Alaska Native communities.

Anecdotal information: Useful anecdotal information on consumption habits of non-fishers, especially people from minority and low-income populations who may be sold or given fish privately, can be gathered by speaking with local community groups in an informal setting.

Behavioral risk surveillance surveys (BRSS): These are random telephone surveys funded by the Agency for Toxic Substances and Disease Registry (ATSDR). Some states have added questions on fisher demographics and consumption.

If it is not possible to use local, community-specific information on seafood consumption by recreational or subsistence fishers, it may be feasible to use survey data generated from a previously studied representative population that may have similar consumption patterns to the group of interest. Summaries of seafood consumption data obtained from sport and subsistence fisher surveys are shown in Tables IV-2 and IV-3, from USEPA (2000b).

Document ID: 0.7.19.1897.3

Table IV-2. Sport fishers[a] consumption data (from USEPA 2000b).

Fisher Group	Seafood Consumption Rates (grams/day)					
	Mean	Median	80th Percentile	90th Percentile	95th Percentile	Fish Type
Alabama	45.8				50.7	F+S, F+C
Louisiana (coastal)		65				F+S, R+C
New York	28.1					F+S, F+C
New York (Hudson River)	40.9					F+S,R
Michigan	14.5		30	62	80	F+S,R
Michigan	18.3			50		F+S, F+C
Michigan	44.7					F, R
Wisconsin (10 counties)	12.3				37.3	F, R
Wisconsin (10 counties)	26.1				63.4	F, R+C
Ontario	22.5					F, R
Los Angeles Harbor		37		225		S, R
Washington State (Commencement Bay)		23		54		S, R
Washington State (Columbia River)	7.7					F+S, R+C
Maine (inland waters)	6.4	2.0		13	26	F, R

F = freshwater, S = saltwater, R = recreationally caught, C = commercially caught.

a Sport fishers may include individuals who eat sport-caught fish as a large portion of their diets.

Table IV-3. Subsistence fishers[a] consumption data (from USEPA 2000b).

Fisher Group	Seafood Consumption Rates (grams/day)			
	Mean	95th Percentile	Max	Fish Type
Great Lakes Tribes	351		1,426	F
Columbia River Tribes	58.7	170		F
High-end Caucasian consumers on Lake Michigan	48[b] 27[c]		144 132	F
Native Alaskan adults	109			F+S

F = fish, S = shellfish.

a Subsistence fishers include individuals who eat sport-caught fish at high rates but do not subsist on fish as a large part of their diets.

b Data from 1982 survey of fish eaters.

c Data from 1989 survey of fish eaters.

Document ID: 0.7.19.1897.3

Consumption estimates for other potentially at-risk groups

Other factors that should be considered when estimating risk are age, reproductive status, general health, and additional occupational or life style exposure potential. For instance, though young children may eat smaller portions than adults, they may consume significantly more seafood per unit body weight. Therefore, a typical risk estimate for a 60-70 kg adult consuming an 8-ounce portion of seafood over a specified time period may underestimate a child's potential exposure level. When children are considered in risk assessment calculations, the USEPA uses an average body weight of 14.5 kg for children under 6 years old. Risks to developing children over a large range of body weights, however, may not be estimated accurately using this value (USEPA 2000b).

Fetuses may be susceptible to maternal PAH exposure because their enzymatic systems are too immature to eliminate toxic metabolites that readily pass through the embryonic and fetal blood-brain barrier. Therefore, it is important to inform women of reproductive age if action levels and consumption limits for PAHs are generated for a carcinogenic endpoint. The elderly, people with certain diseases, and people who may be exposed to PAHs through smoking or at high levels occupationally also may be more susceptible to the effects of PAH exposure from seafood consumption than the general population. Consequently, it may be advisable for people in these groups to limit their consumption of contaminated seafood to levels below those considered safe for the general population.

Considering that many local seafood consumers may fall into these potentially higher-risk groups, risk estimates based on average body weights, meal sizes, and consumption estimates for the general population may not accurately reflect actual risk levels of the exposed population. Therefore, it is important to communicate to the public the assumptions (i.e., body weights, meal sizes, meal frequencies) used to generate risk estimates and action or advisory levels.

For further information on calculating risk-based consumption limits for finfish and shellfish, see the third edition of the USEPA *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories Volume 2: Risk Assessment and Fish Consumption Limits* (2000b).

Document ID: 0.7.19.1897.3

V. RISK COMMUNICATION

General Considerations

Risk communication is defined as "an interactive process of exchange of information and opinions concerning risk and risk-related factors among risk assessors, risk managers, consumers, and other interested parties" (FAO/WHO 1998). The definition of risk is essential to the discussion. Risk has been defined as "a combination of the probability, or frequency, of occurrence to a defined hazard and the magnitude of the consequences of the occurrence" (Warner 1992 cited in Jones and Hood 1996). Both technical and social factors should be considered when communicating information on the health and safety of seafood following an oil spill, particularly when dealing with different groups. The risks and consequences have different meanings for the subsistence user, sport fisher, average consumer, commercial fisher, elected official, regulator, and responsible party representative. Regulators and scientists measure risk quantitatively and accept the uncertainty inherent in the risk-assessment process. The public perceives risk more qualitatively and subjectively, and is influenced by prior experience with similar risks and information made available to them. The public wants to know whether the seafood is safe to eat; yet the answers given are typically posed in terms of "acceptable risk" or "not a significant risk." Risk communicators should be aware of and try to overcome: 1) gaps in knowledge, 2) obstacles inherent in the uncertainties of scientific risk assessment, and 3) barriers to effective risk communication (Nighswander and Peacock 1999).

General recommendations for risk communication during oil spills include:

General recommendations for risk communication during oil spills include:

- Be proactive. Acknowledge and discuss the potential impacts to seafood safety from an oil spill as soon as possible. Establish a group responsible for assessing the risks to seafood early and review the risks as necessary as the spill evolves and new information is made available.
- Keep the public informed. Tell the public what you are doing to determine whether seafood safety is at risk. Release information quickly. Publish maps showing where and what type of seafood samples are being collected, and how they are being tested. Identify a Point of Contact for further information, and make sure that the public can reach the Point of Contact without delay. Make sure that the Point of Contact has the most current information and is prepared to answer questions, or knows how to get answers quickly. Response to all requests for information is important. Consider a web-based strategy for distributing seafood safety information, where individuals can check to see whether seafood in their area has been tested and to obtain test results.
- Meet directly with affected groups to discuss the issues and process. Direct meetings with groups such as commercial fishing associations, recreational users, subsistence users, seafood vendors, etc. providing opportunities to ask questions can be very effective. However, meetings can fail if the risk communicators are not prepared or knowledgeable, or appear to be withholding information. Specialized bulletins or communication methods may be necessary for special groups, such as Native American subsistence users and non-English-speaking users.
- Use unambiguous terms whenever possible. Health risks are commonly described in terms of probabilities of cancer based on assumed consumption rates and periods. It is assumed that carcinogens do not have safe thresholds for exposures; that is, any exposure to a carcinogen

Document ID: 0.7.19.1897.3

may pose some cancer risk (USEPA 2000b). However, it is both useful and appropriate to define "safe" and "unsafe" levels of PAHs in seafood based on risk rates that are commonly considered to be acceptable. For example, water-quality criteria for carcinogenic contaminants in water usually use risk rates in the range of 10^{-5} to 10^{-6}. The general public understands the concepts of acceptable risks, although there may be components of society where these risks conflict with local cultures, such as the Alaska Native subsistence users during the *Exxon Valdez* oil spill (Field et al. 1999). As long as the risk communicators clearly define what is meant by "safe" and "unsafe," these terms are appropriate.

Lessons Learned from Previous Oil Spills

The *Exxon Valdez* and *New Carissa* oil spills provide examples of the range of issues faced in dealing with seafood safety at oil spills and the lessons learned in terms of risk communication. Each is summarized briefly below.

The *Exxon Valdez* oil spill impacted subsistence seafood users over a distance of nearly 800 kilometers, affecting 1,750 kilometers of shoreline and the harvest areas of 15 predominantly Alaska Native villages (Field et al. 1999). It was perceived that seafood safety for subsistence users was addressed relatively late in the spill response, and the active role of the responsible party in the seafood safety studies was a constant source of suspicion on the part of the village residents. Furthermore, there were conflicts in terms of the technical guidance for seafood safety ("use your own sensory tests and avoid collecting seafood in areas that showed evidence of oil") and the subsistence users' expectations that chemical testing would provide definitive answers to the questions about whether it was safe to eat the seafood. An Oil Spill Health Task Force, formed after the spill to deal with subsistence seafood issues, had to deal with the complex cultural issues of Native Alaskan subsistence users without any guidance or health criteria. In fact, much of the guidance in use today with regard to seafood risk from petroleum contamination is based on the approach developed by the task force for this spill. Fall et al. (1999) provided a ten-year perspective on the lessons learned for this spill with a significant impact to Native subsistence users:

- The active role of the responsible party was met with considerable skepticism and resulted in perceived conflict of interests that affected all phases of data collection, interpretation, and recommendations.
- There were significant cultural conflicts in defining seafood safety and edibility. A spill that impacted so many animals and habitats was perceived to also have significant impacts to human health, regardless of the information provided on actual health risks to consumers in the impact area.
- There was a perceived "double standard" for subsistence users, compared with commercial fisheries. Some commercial fisheries were closed within the first year after the spill, applying a "zero-tolerance policy" in order to protect the market for Alaskan salmon, which was not based on concerns about consumer safety. In contrast, subsistence users were told to avoid oiled areas and not eat food that smelled or tasted like oil.
- There was a need for direct communication with village residents, especially during the first year when concerns were greatest. Individual community members will not necessarily receive health-safety information distributed to community representatives. Formal mechanisms are needed for soliciting feedback and evaluating how well the risk communication efforts are being received.

Document ID: 0.7.19.1897.3

In contrast to the *Exxon Valdez* oil spill, the *New Carissa* oil spill outside Coos Bay, Oregon occurred in a region of commercial and recreational fisheries where health advisories are routine. The Oregon Department of Agriculture (ODA) regulates commercial shellfish harvest under a strict water quality standard set by the U.S. Food and Drug Administration, which assumes there may be raw consumption of the product. Commercial fisheries are routinely closed depending on the amount of rainfall within specific watersheds, based on established correlations between rainfall and coliform counts. "Rainfall" closures are a common occurrence, and there are established communication mechanisms for notification of rainfall closures and openings. With regard to recreational fisheries, clamming and mussel harvesting are often closed due to domoic acid or amnesic shellfish poisoning. Figures V-1 and V-2 show official notifications for closure and opening of shellfish harvests during the *New Carissa* oil spill. Commercial and recreational users are accustomed to notifications of closures and openings based on accepted criteria for seafood safety. The closure of both commercial and recreational shellfish harvests during the *New Carissa* oil spill was met with limited resistance and confusion because of this established relationship between the regulator and user communities.

Document ID: 0.7.19.1897.3

Figure V-1. Commercial shellfish harvest closure notice issued during the New Carissa oil spill.

To: Interested Parties

From: Oregon Department of Agriculture, Shellfish Program

Date: **February 17, 1999 (corrected update)**

Subject: Status of Commercial Shellfish "Rainfall' Closure

Commercial shellfish harvest is regulated by the Department of Agriculture (ODA) under a strict water quality standard set by the U.S. Food and Drug Administration (FDA), which assumes there may be raw consumption of the product. ODA does not close recreational shellfish areas without the cooperation of Oregon Department of Fish and Wildlife (ODF&W). When sewage or biotoxin contamination is evident, this agency will confer with ODF&W, DEQ and local county health departments to determine whether recreational shellfish harvesters are at risk and if they should be notified that shellfish harvest is closed. Call (503) 986-4720.

Nehalem Bay remains closed. Nehalem R did not fall below 7' since it peaked on 2/8. Nehalem closes if rainfall at Tillamook over 1" in 24 hrs (new plan using river stage in works).

Tillamook Bay, Main Bay closed today, February 17, 1999. The Wilson rose above 7' about 1 am today. The Main Bay is closed when Wilson R. exceeds 7.0'.

Cape Meares Area of Tillamook Bay remains closed. Cape Meares is closed for 7 days if 24 hrs rainfall exceeds 1"or when Wilson R. exceeds 7.0'.

Netarts Bay is open. This bay is closed for shellfish toxin events or flooding catastrophes.

Yaquina Bay, Main River, is **open.** This area closes for 5 days when Toledo rainfall exceeds 1.5"/24 hrs or if 3 days accumulative rain exceeds 3".

Winchester Bay and the Umpqua River to Big Bend, remains closed for rainfall; and harvest restrictions are ongoing due to potential for contamination from the New Carissa oil spill. This area closes for 7 days when the river exceeds 7.5' or > 1.5"/24 hrs.

Umpqua R. Triangle, So Jetty, closed today February 17, 1999 for rainfall/river ht; and harvest restrictions are ongoing due to potential for contamination from the New Carissa oil spill. The Umpqua went over 12' at around 4pm today. This area closes for 5 days if Umpqua R. @ Elkton exceeds 12' or rainfall > 2.0"/24 hrs.

Lower Coos Bay is closed; harvest restrictions are ongoing due to potential for contamination from the New Carissa oil spill. (down bay from No. Bend airport) is not closed for rainfall events.

Upper Coos Bay, opened February 12, 1999 from rainfall closure; but harvest restrictions are ongoing due to potential for contamination from the New Carissa oil spill. Upper Coos is closed 5 days if 24 hr rainfall exceeds 1.5" or 3 day accumulative rainfall exceeds 3"

South & Joe Ney Sloughs opened, February 12, 1999 from rainfall closure; but harvest restrictions are ongoing due to potential for contamination from the New Carissa oil spill. So Slough is closed 5 days if 24 hr rainfall exceeds 1.5" or 3 day accumulative rainfall exceeds 3" In addition to rainfall criteria, Upper So. Slough (area above Younker Pt) closes when tidal exchange exceeds 7.5'. During tidal closures growers may tend but not move shellstock.

Document ID: 0.7.19.1897.3

Figure V-2. Shellfish harvest closure notice issued during the New Carissa oil spill.

Lower Coos Bay and the Charleston Boat Basin Area Added to Clamming and Mussel Closure Due to Oil Leaks From the *New Carissa*

Oyster Harvesting on Hold

February 12, 1999. The Oregon Department of Agriculture is adding Lower Coos Bay and the Charleston Boat Basin to the areas closed to shellfish harvesting as result of the oil spilling from the New Carissa. Surveys of the area made today indicate that oil sheen and oil globules are visible in these areas. The upper boundary for the Lower Coos Bay closure is the railroad bridge above North Bend; the upper boundary for the boat basin area closure is the Charleston Bridge.

Mussel and clam harvesting was prohibited on the beaches in Coos and Douglas counties yesterday due to possible contamination from the New Carissa oil spill. The extent of contamination on the beaches and bays is being surveyed today. These areas remain closed at this time. The public should take heed of any signs on Coos and Douglas County beaches and bays that alert them to shellfish closures.

The Department has required oyster growers to limit harvesting to areas that have been surveyed and confirmed to be unaffected by the spread of oil. This is an ongoing process due to the changing tides and the survey reporting process. At this time no oil has been seen in the oyster growing areas. Commercial oyster harvest will be prohibited from any areas contaminated by oil. There are inspectors on the scene to inspect shellfish and assure commercial shellfish safety.

The Department is in contact with natural resource advisors at the incident command and will keep the public and the commercial industry advised of shellfish safety information.

For more information call the Department of Agriculture's shellfish information line at (503) 986-4728 or Ron McKay at (503) 986-4720.

Communicating Relative Risks

Risk communicators commonly compare the relative risk of a specific activity to known risks of other activities. For example, the public is accustomed to hearing the risks of death by automobile accident or airplane crash. These are considered voluntary risks taken by people who decide to drive or fly after considering the risks and benefits associated with these activities, whether or not their perceptions are realistic. The public generally will accept risks from voluntary activities that are roughly 1,000 times greater than involuntary risks that provide the same level of benefits (Starr 1996).

Because the potential human-health risks from eating seafood contaminated by an oil spill are associated with PAHs, it is tempting to compare the PAH levels in seafood samples with those found in other food sources. PAHs are ubiquitous contaminants, measurable in many foods. Table V-1 summarizes the levels of PAHs in some commonly consumed foods. Based on information from previous spills, PAH levels in seafood from oil-spill-contaminated waters generally are considerably lower than PAH levels found in smoked foods. During the *Exxon Valdez* oil spill, however, village community residents became upset when it was pointed out that samples of smoked fish from the villages contained carcinogenic hydrocarbon levels hundreds of times higher than any shellfish samples collected from oiled beaches, and nearly 10,000 times higher than wild salmon (Nighswander and Peacock 1999). The residents considered eating smoked salmon to be an acceptable, voluntary risk, and eating oil-contaminated seafood to be an involuntary, unacceptable risk. Guidelines for risk communication include being sensitive to the distinction between voluntary and involuntary risk, and avoiding risk comparisons that equate the two (Chess et al. 1994). Risk comparisons should be made carefully.

Document ID: 0.7.19.1897.3

Table V-1. PAHs in foods (Bolger and Carrington 1999).

Source	PAH (ppb or µg/kg)	B[a]P (ppb or µg/kg)
Corn oil	2-10	0.4-1.0
Smoked meat and fish	10-20	0.3-60
Bakers yeast	10-350	2-40
Kale	60-500	13-48

Document ID: 0.7.19.1897.3

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Document ID: 0.7.19.1897.3

VII. Glossary of Terms

API gravity: An arbitrary scale expressing the gravity or density of liquid petroleum products. The petroleum industry uses API gravity rather than density because the API scale provides greater distinction between different kinds of oils than does specific gravity. The measuring scale is calibrated in terms of degrees API. API gravity is determined by the equation API at 60°F = 141.5/oil density -131.5.

API gravity is based on the density of pure water with an arbitrary API gravity value of 10. The higher the API gravity, the lighter the product. Light crude oils generally exceed 38 degrees API and heavy crude oils are commonly labeled as all crude oils with an API gravity of 22 degrees or below. Intermediate crude oils fall in the range of 22 degrees to 38 degrees API gravity. Most oils have densities that are less than water and will generally float on the water surface. Oils with a specific gravity greater than 1.0 (API gravity of less than 10) will sink in fresh water (which has a specific gravity of 1.0 and an API gravity of 10). Non-floating oils in seawater have a specific gravity greater than 1.02 or an API gravity less than 7.

Adulteration: A food is deemed to be adulterated if it bears or contains any poisonous or deleterious substance that may render it injurious to health, or if it contains any filthy, putrid, or decomposed substances, or if it is otherwise unfit for food.

Advection: The transport of oil by water currents.

Aerial observation: Trained experts fly in helicopters or airplanes to make systematic observations on the position of oil slicks and stranded oil, oceanographic features that might influence oil behavior (such as eddies, rip currents, river outflow plumes, current speeds), distribution of wildlife (birds, turtles, marine mammals), or the effectiveness of response operations (dispersant applications, skimming).

Aliphatics: Hydrocarbon compounds composed of straight or branched chains of hydrogen and carbon. They have low water solubility and low aquatic toxicity. The low molecular weight compounds have high rates of microbial degradation.

Aromatics: Hydrocarbon compounds that contain one or more benzene rings. Mono-aromatics include benzene, toluene, ethylbenzene, and xylenes. Polycyclic aromatic hydrocarbons (PAH) (also sometimes referred to as polynuclear aromatic hydrocarbons) contain two or more benzene rings. Most of the toxicity of oil to water-column organisms results from the low molecular weight aromatic compounds.

Asphaltenes: Large, heavy compounds in oil that weather extremely slowly. Not present in light, refined products such as gasoline and diesel. Can be the dominant group of compounds in heavy refined oils.

Barrel: A volume measure of oil = 42 U.S. gallons.

Benthos/Benthic: Animals associated with the bottom of a body of water. If the animals are on the surface, they are called epifauna; if they live in the sediment, they are called infauna.

Bioaccumulation: The net accumulation of a substance by an organism as a result of uptake from all environmental sources and all possible routes of exposure, including contact, respiration, and ingestion.

Bioconcentration: The net accumulation of a substance as a result of uptake directly from aqueous solution.

Document ID: 0.7.19.1897.3

Biodegradation: The breakdown of substances such as oil by microbes (bacteria, fungi, yeast) as they use it as a food source. Intermediate products are formed during the process, but the final products are carbon dioxide and water. This process is limited to a great extent by temperature, nutrient and oxygen availability, and the amount of oil present.

Biomagnification: The increase in body burden of a contaminant with trophic level.

Density of oil (specific and API gravity): Mass of a given volume of oil (in grams/cm^3) used to define "light" and "heavy" oils. Also measured in specific gravity (the oil's relative density compared with that of water at 15°C). The higher the specific gravity, the heavier the product. API gravity is based on the density of pure water with an arbitrary API gravity value of 10. The higher the API gravity, the lighter the product. Most oils have densities that are less than water and generally will float on water. Non-floating oils in seawater have a specific gravity greater than 1.02 or an API gravity less than 7.

Dispersants: Specially designed products composed of detergent-like solvents and agents applied directly from planes, helicopters, or vessels to help break oil slicks into small droplets that disperse into the water column and spread in three dimensions through natural water movement.

Dispersion: The process of breaking oil into very small particles or droplets (ranging in size from less than 0.5 microns to several mm) that mix into the water column. The smaller droplets will not refloat to the surface, but rather will move with the currents; larger droplets may refloat under calm conditions and reform slicks or sheens.

Dissolution: Loss of water-soluble components of oil into water. Compounds in oil are only very slightly soluble (maximum water-soluble fraction for crude oils in salt water is usually 10 to 30 ppm).

Distillation Fractions: The fraction (generally measured by volume) of oil that is boiled off at a given temperature. Used in models to predict the amount of oil loss via evaporation.

Elimination: All of the processes that can decrease tissue concentrations of a contaminant, including metabolism, excretion, and diffusive loss.

Emulsification (mousse formation): The process whereby small water droplets are incorporated into the oil, changing many of the oil's properties. Often has the consistency of chocolate mousse. Water content can be as high as 80%, increasing the volume of oily material for recovery and disposal. Greatly affects the efficiency of skimmers and pumps.

Evaporation: Transfer of the volatile fractions in oil from the liquid phase to the vapor phase. It is the single most important weathering process for the first several days of an oil spill.

Fingerprinting: Chemical analyses and interpretations used to compare an oil (usually the spilled oil) with other oils to determine whether they are from the same source. It is a critical process when the spill source is unknown. It is also important to determine the source of oil in environmental samples, such as seafood, compared to background contamination.

Growth Dilution: The process whereby the rate of accumulation is exceeded by the rate of tissue growth so that when the concentration is expressed on mass of chemical per mass of tissue over time, it appears as though elimination is occurring because the tissue concentration is decreasing.

Half-life: The time it takes for the concentration of a compound to decrease by half.

HAZMAT: NOAA Hazardous Material Response Division. Coordinates scientific support to the U.S. Coast Guard for oil and chemical spills. Has information for oil spill response at Web sites: http://response.restoration.noaa.gov and http://www.IncidentNews.gov

High-molecular weight PAHs: PAHs with 4-6 benzene rings.

Document ID: 0.7.19.1897.3

Hydrophobic: "Water-fearing," a substance that is attracted to oil, lipids, and fats and repelled by water.

Lipophilic: "Lipid-loving," a substance that is attracted to oil, lipids, and fats.

Low-molecular weight PAHs: PAHs with 2-3 benzene rings.

Metabolism: Enzymatic process that converts insoluble petroleum hydrocarbons into more soluble breakdown products (metabolites) that can be more readily excreted by animals that have a kidney or kidney-like organ.

Microbes: At oil spills, the focus is on bacteria, fungi, and yeast that are able to degrade petroleum hydrocarbons.

Pelagic: Marine animals that live free from direct dependence on the sea bottom or shore. Free-swimming forms are nektonic; floating forms are planktonic.

Petrogenic: Hydrocarbons derived from petroleum oils, in contrast to pyrogenic hydrocarbons, derived from the combustion of fossil fuels.

Photo-oxidation: The process by which the components in oil are chemically transformed through a photochemical reaction, in the presence of oxygen.

Polar compounds: Very heavy, persistent compounds in oil, including asphaltenes (very large compounds) and resins (smaller compounds that bond with sulfur, nitrogen, or oxygen). Slowest to biodegrade.

Pour point: The temperature to which a substance must be heated to make it flow. Oils with a high pour point can congeal into semi-solid masses when spilled.

Pyrogenic: Hydrocarbons derived from the combustion of fossil fuels.

Salinity: A measure of how much salt is dissolved in water. Full strength seawater is about 35 parts per thousand (ppt). Freshwater is 0 ppt. The water in estuaries is a mixture of these two.

Saturates: Group of petroleum hydrocarbons consisting primarily of alkanes, but also cyclo-alkanes and waxes (large saturates).

Scientific Support Coordinator (SSC): Provides liaison with the scientific research and response community to the U.S. Coast Guard for oil and chemical spills.

Sedimentation: When particles suspended in the water column settle to the bottom. Can include settling of silt and clay in calm water and oil and sand mixtures in the surf zone and in rivers.

Sheen: A very thin layer of oil on water. Color indicates the thickness and volume per area:

Silver sheen	0.00007 mm	75 gallons/square nautical mile
First color trace	0.0001 mm	150 gallons/square nautical mile
Rainbow colors	0.0003 mm	300 gallons/square nautical mile
Dull colors	0.001 mm	1,000 gallons/square nautical mile
Dark colors	0.003 mm	3,000 gallons/square nautical mile

Solubility: How much of an oil will enter the water column on a molecular basis. Solubility of oil in water is generally <100 parts per million (ppm); thus it not a significant loss mechanism for oil.

Taint: An off-flavor or off-odor in seafood that is not typical of the flavor or odor of the seafood itself.

Tonnes (metric): a weight measure for oil, approximately = 300 gallons.

Document ID: 0.7.19.1897.3

Toxicity (acute and chronic): An adverse affect on a living organism caused by exposure to a contaminant, such as oil. Acute toxicity occurs over a very short exposure period (hours to days) and usually results in death. Chronic toxicity occurs from long-term exposure (weeks or more) and causes impacts to reproduction, growth, and behavior.

Trajectory: A prediction of where the oil will be transported by wind and currents over time.

Uptake: Acquisition of a substance from the environment by an organism as a result of any active or passive process. Uptake is controlled externally by the partitioning behavior of the contaminant (between sediment, water, and food) and internally by the organism's behavior and physiology.

Viscosity: Resistance to flow in a liquid. Determines whether dispersants will be effective on an oil slick. Viscosity increases as it gets colder and as the oil weathers. Low viscosity is like water, medium viscosity is like molasses, and high viscosity is like tar.

Weathering: Changes in the physical and chemical properties of oil due to natural processes that begin when the discharge occurs and continue until the oil is removed. Major weathering processes include evaporation, emulsification, dissolution, photo-oxidation, and biodegradation.

Document ID: 0.7.19.1897.3

Appendix

Document ID: 0.7.19.1897.3

	NOAA/NMFS NATIONAL SENSORY SECTION **CHAIN OF CUSTODY FORM** **7600 Sand Point Way NE, Seattle, WA** **For more information contact Michael DiLiberti** **978-281-9123 or FAX 978-281-9125**

Project_____ **Sampler**_____

Sample I.D. #	Date Collected	Location	Sample Type (Tissue, oil, water. Include species name and tissue type)	Comments

Collected by	Received by:(signature)	Condition:	Date/Time
Relinquished by: (signature)	Received by:(signature)	Condition:	Date/Time
Relinquished by: (signature)	Received by:(signature)	Condition:	Date/Time
Relinquished by: (signature)	Received by:(signature)	Condition:	Date/Time
Relinquished by: (signature)	Received by:(signature)	Condition:	Date/Time
Relinquished by: (signature)	Received by:(signature)	Condition:	Date/Time

* If shipped, include carrier name and copy of shipping invoice

Document ID: 0.7.19.1897.3



Donald L. Evans
Secretary, U.S. Department of Commerce

Vice Admiral Conrad C. Lautenbacher, Jr., USN (Ret.)
Under Secretary for Oceans and Atmosphere and NOAA Administrator

Jamison S. Hawkins
Acting Assistant Administrator for
Ocean Services and Coastal Zone Management,
NOAA Ocean Service

November 2002

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Received(Date): Fri, 18 Jun 2010 17:56:50 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: DWH UPDATES 6.18.2010
To: DWH leadership <DWH.Leadership@noaa.gov>
2010_0617_Seafood Safety Daily Report.docx
MMST Health and Stranding Update 06-17-10.doc
NRDA Activities Report_6_18_10.doc
OMAO DWH Aircraft Tasking - Program Impacts 061410.docx
OMAO DWH Ship Tasking - Program Impacts 061410-1.docx
OMAO_Assets_Gantt_Chart_061810.xlsx
Proposed OMAO Asset DWH Response Schedule 061810.doc

PRIORITY
ISSUES
RESPONSE OPERATIONS - NIC/ICC/NRT See PowerPoint Attached "Quad_18Jun.pptx"
SCIENCE See PDF attached "NOAA Science Briefing June 21.pdf"
LMR Fisheries Closures
* There was no change to the closed area for June 17, 2010, The closed area remains 80,806 sq mi (209,286 sq km) and covers about 33% of the GOM EEZ.
Seafood Inspection
* Steven Wilson, Peter Koufopoulos, Nancy Beck and Jeff Bigler of the EPA worked to finalize the re-opening protocol. This was generally accepted by the Gulf States on the States Call.
* Completed the third States Sensory Screener Class in Pascagoula, MS.
* Three NWFSC staff are in Pascagoula assisting NSIL staff in preparing for analysis fish and shellfish to be shipped for chemical analyses.
* NWFSC is continuing chemical analysis of blue crab muscle and hepatopancreas (tomalley).
* The complete seafood inspection report is attached.
Marine Mammal and Turtle Health and Stranding
* 397 stranded (increase of 8 from June 16)
o 360 of the stranded were found dead (increase of 5 from June 16)
o 37 of the stranded were found alive (increase of 3 from June 16)
o 4 recovered alive but died in rehab (no change from June 16)
o 4 turtles released alive (no change from June 16)
o 29 live turtles in rehabilitation (increase of 3 from June 16)
o 241 carcasses to be necropsied, if decomposition stage warrants (increase of 5 from June 16)
* To date, visible evidence of oil has been documented externally on 5 dead stranded sea turtle and 6 live stranded turtles (2 of which were caught in skimming operations).
* To date, visible evidence of oil has been documented externally on 69 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.
LMR (2) * 46 dolphins have been verified to date within the “designated spill area” (increase of 1 from June 16).
o 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding and one that stranded live in boom and was freed immediately (increase of 1 from June 16)
o 2 carcasses to be necropsied, if decomposition stage warrants (decrease of 1 from June 16)
o 7 full necropsies performed (increase of 1 from June 16)
o Necropsy results are pending for all animals necropsied to date.
* 1 dead stranded sperm whale has been verified to date within the “designated spill area” (no change from June 16)
* A marine mammal carcass retrieval and disposal plan and a sampling and disposal plan for dead marine mammals observed by NOAA vessels are being finalized.
* The complete health and stranding report, turtle stranding map, dolphin stranding map, and large whale stranding map are attached.
NRDA 1. Technical Working Group Updates
Shoreline: Four teams went out in the field to complete pre-assessment shoreline surveys in Barataria Bay.
Team 1- Shoreline pre-assessment along northern edges of Hospital Bay. Vegetation oiled within areas with previous SCAT data; condition varied between no visible vegetation oiling to a solid band of oil several feet into the marsh. Oiling within the water was predominately silver sheen with some sheening from oiled vegetation which produced rainbow sheens from the thicker bands. Moderate to heavy oiling was present along the edges of Hospital Bay where SCAT data showed moderate oiling. Oiling within the water was predominately silver sheen with some small pea sized droplets with silver stringers.
Team 2 - Shoreline pre-assessment from Port Sulphur Marina out to Wilkinson Bay. Shoreline covered with heavy to moderate oiling, some oil sheen on water. Response activity included absorbent boom along some shoreline. At some

waypoints lightly oiled shoreline with no sheen on water.
Team 3- collected NRDA pre-assessment data on the south side of East Timbalier Island – with one additional point taken on the north side. Assessment began at the east end of the island (were SCAT data was not mapped) and progressed westward (to were SCAT data was available). Assessment stopped mid island to avoid a storm and began again at the same point approximately 2 hours later.
Team 4 –assessed the several islands and the mainland coast directly north of the western end of Grand Isle, LA. Team four found the southwest end of the island to be moderately oiled with Spartina alterniflora covered from bottom to top at the outer edge ranging to 25 inches. Shoreline oil penetration was 10 feet from water's edge. The remainder of the island was clean with the exception of four spots of light oiling. The northern island in the northeast corner of Porpoise Bay was clean on the northeastern side with the exception of about 900 feet of light oiling along the southern end. The southernmost of the two islands on this corner of Porpoise Bay was clean on the eastern and southern exposures.
NRDA (2) Sample Intake Teams – Samples processed at shoreline as of 6/17/10:
· Chain of Custody's processed: 273
· Number of Bottles: 3298

Chemistry: As of June 17th, approximately 6500 samples have been collected to support NRDA baseline and pre-assessment data collection. The total number of samples drastically increased in the last two days due to Entrix's field samples being added to the trustee sample tracking database. The total number of samples now consists of approximately 61% water samples, 28% sediment samples, and 5% or less of tissue, oil (tarballs), oil on water product, and dispersant.
Water Column: NRDA sampling activities are ongoing aboard 6 vessels.
NRDA sampling activities are ongoing aboard two vessels:
· Brooks McCall: Deep water sampling 5 km N of well head.
· Jack Fitz: At sea on cruise 3. Deepwater ROV sampling NW of wellhead at 2km ring. They are sampling in the rising plume.
· Ocean Veritas: In Port Fourchon, LA rotating with Brooks McCall for deepwater sampling.
· Thomas Jefferson: Establishing baseline with CTD casts and coastal sampling.
· Rachel Bordelon: In Houma, getting underway 6/18. Will be supporting the Jack Fitz with acoustic surveys.
· Endeavor: In transit to deploy drifters and conduct deep water sampling.

Fish: Field team tested active and passive methods for detecting submerged oil in Barataria Bay. NGO representatives observed field activities (See Media/Outreach Update below).

Human Use: Boat ramp and shore fishing counts in LA, MS, AL and FL.

NRDA (3) SAV: Teams sampled in Mobile Bay, AL, St Joseph's Bay, FL and Chocohatchee Bay, FL collecting baseline vegetation and sediment samples. Currently identifying long-term sampling dates and sites for injury assessment phase.

Marine Mammals: Marine Mammal survey team aboard Gordon Gunter is underway on a sperm whale preassessment survey. Five bottlenose dolphin biopsies were collected in St. Joseph Bay as part of a Pre-Assessment Plan. Aerial survey conducted to assess marine mammals and sea turtles in oil and support rescue operations. One marine mammal was in water with little to no oil. No turtles were seen.

Media/Outreach Update:
Tom Brosnan hosted representatives from Ocean Conservancy, Oceana, and Gulf Restoration Network and they accompanied a field team testing methods for detecting submerged oil. A member of the field team provided a brief explanation of the field activities in the beginning and answered a few questions on what we saw at the end. The NGO representative gained a new appreciation for the logistical challenges, the scope of the issues and the good work being done.
ASSETS AND PLATFORMS The following digital files are attached. Information is current as of Date Time Group in subject line.

1. NOAA Platform Powerpoint showing current mapped locations of assets.
2. OMAO Assets Excel Gantt Chart showing projects assigned to each asset.
3. Proposed OMAO Asset DWH Response Schedule Word document
identifying impacts to NOAA projects should OMAO assets be tasked.

Document ID: 0.7.19.1947

4. DWH Ship Tasking Impacts.
5. DWH Aircraft Tasking Impacts.
OPERATIONAL
REGIONAL No Report
LEGISLATIVE / INTERGOV'T AFFAIRS No Report
COMMS / PUBLIC AFFAIRS No Report
EXTERNAL ENGAGEMENT Interactions:
Confirmed NOAA speaker for the Greater New Orleans Disaster Response Partnership monthly meeting on June 23, 2010. Mark Schexnayder, from the LSU AgCenter and the Louisiana Sea Grant College Program, will be able to give an overview of NOAA's role
in the response to the oil spill as well as Sea Grant's involvement.

Connected Karrie Carnes at NOAA Santuaries in Key West, FL with Mike Spranger of FL Sea Grant to discuss outreach efforts in the FL Keys.

Set up NOAA speakers for the weekly NGO telecom hosted by the White House and coordinated with CEQ and WH-OPE in the a.m. planning tagup. Buck Sutter and Doug Helton were our NOAA representatives this week. Questions focused mainly on the flow rate, subsurface oil and trajectory.

Complaint e-mails:
External Affairs received 1 email over the past 24 hours. We responded
to it and 2 more sent yesterday. The topic was a suggested calculation
of oil flow.

· Mass Notifications: None today.
DATA INFORMATION See PowerPoint Attached "DWH Activities Report Quad OCIO 061810.pptx"
IA/ INTERNATIONAL AFFAIRS 1. A request for a briefing was received by NMFS/IA from the Mexican Embassy in Washington. We understand the issues Mexico wishes to have covered are: the spread of the oil, the areas where the currents may take it, the impact on the fisheries, and any preventive or remedial action that can be foreseen and undertaken or aspect that NOAA may deem relevant. We are working with the State Department to respond. (Note: an offer of a briefing was conveyed by the U.S. Embassy in Mexico City to appropriate officials who declined the offer).

2. The response to the Bahamas questions was sent to OMB for final clearance. Once cleared, they will be transmitted to the U.S. Embassy, Nassau, for delivery.

3. A meeting is called next Wednesday to include each Line Office and Bonnie Ponwith of the Gulf of Mexico LME Project to begin discussing long term Gulf recovery and restoration in line with the President’s speech this week.

4. In 2 areas of follow-up, we are both seeking a read-out from the Cuba Desk on their meeting today with a Cuban delegation working with State to respond to Margaret Spring’s request for a listing of offers of assistance made by foreign governments.
LEGAL / GC No Report
POLICY / BUDGET No Report

NOAA Data and Information Management Activities Report
June 18, 2010
Information as of June 18, 2010

Critical Issues for Discussion/Action

None

Key Results

Regarding Data.gov, the site will be available at www.data.gov/restorethegulf -- but will not go live until the actual www.RestoreTheGulf.gov site goes live--live date postponed until Monday at the earliest.

EPA identified four components they want to have added into geoplatform.gov. These files have sampling locations only -- with hyperlink back to www.epa.gov/bpspill to obtain the sampling data. EPA continues work on additional services that will contain the same points along with data. Ultimately getting the points and data showing up in geoplatform.gov.

Yesterday's Activities Recap

Current Unified Command site deepwaterhorizonresponse.com site is migrating to restorethegulf.gov as early as tomorrow June 18, and the geoplatform.gov/gulfresponse is in a very prominent location on this new website (snapshot attached). The restorethegulf.gov site will also have a prominent link to data.gov. Additionally, a separate data.gov oil spill site (maybe www.data.gov/bpoilspill) is in development and may go live tomorrow as well.

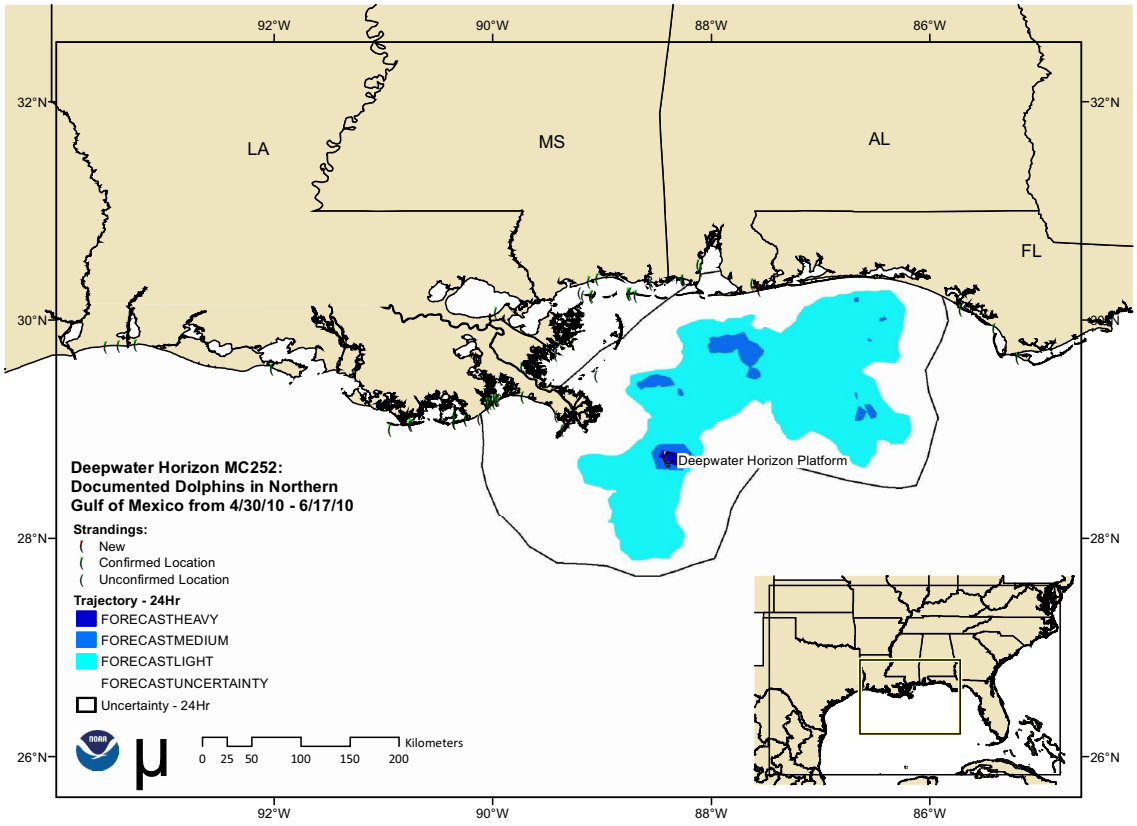
EPA data public release is now tied to the data.gov and restorethegulf.gov development. Coast Guard is working the migration of BP data to the Coast Guard environment and then replication to NOAA for ERMA or geoplatform.gov. DHS considers this option to be suboptimal, so we are reviewing options. NOAA reviewed the current BP data base and many of the layers are duplicative or already incorporated within ERMA. Additionally, most of the BP database lacks attribution, and some BP data would be restricted access and not for public display due to security restrictions.

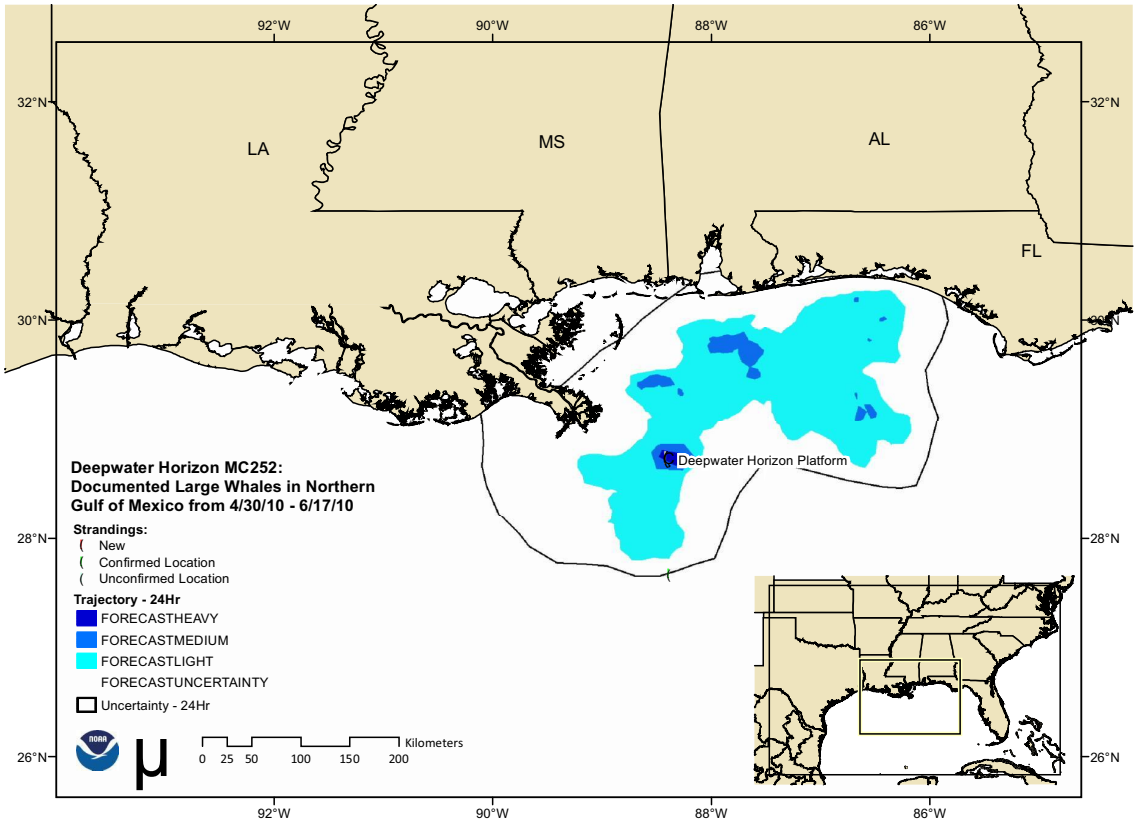
Upcoming Activities

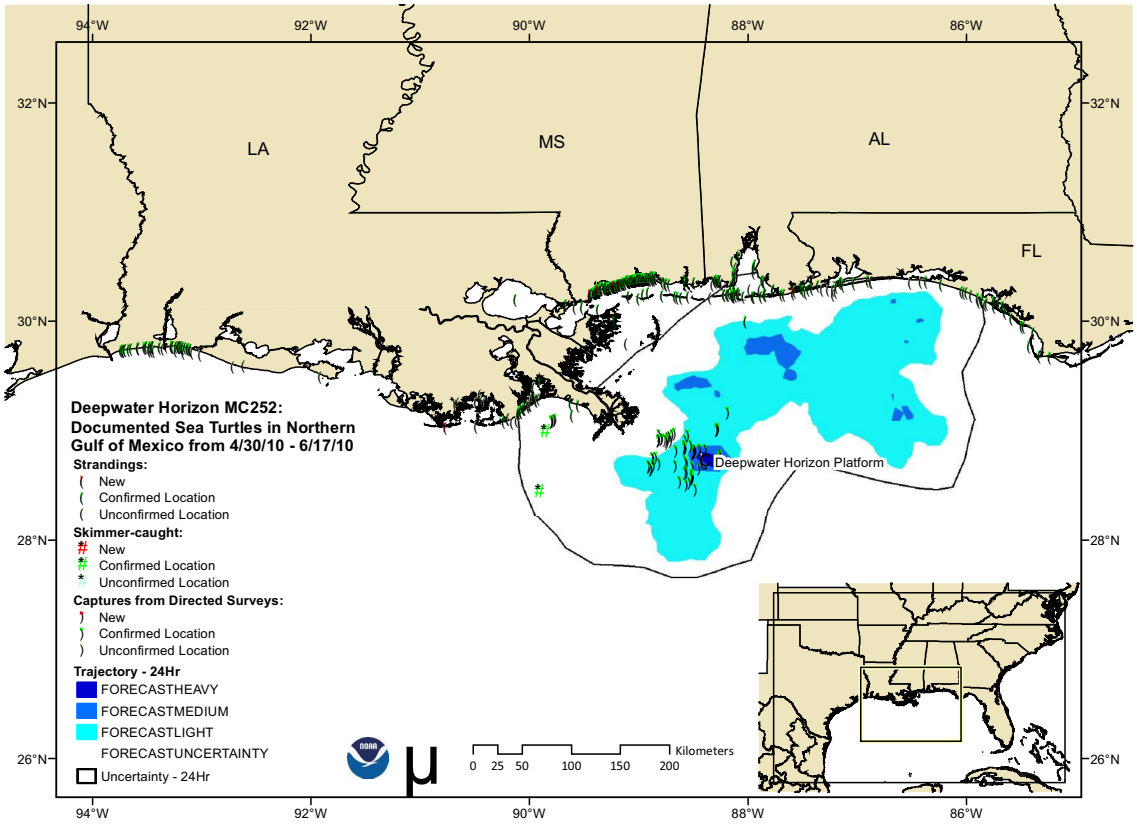
A demo of geoplatform.gov is scheduled for Tracy Waring's DWH Integrated Services Team Tuesday June 22 at FEMA HQ.

Effort to consolidate BP and government geo spatial data is underway. Coast Guard migrating BP GIS capabilities and data into their environment to share the data with ERMA government and public viewers. Coast Guard GIS services not to be used as the COP viewer in the Unified or Area commands-- ERMA is to serve that role.

Tentative meeting scheduled for Tuesday June 22 evening with Federal Geospatial leads to discuss how take advantage of the energy and interest and continue to build out the concepts of the Geospatial Platform.


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
0 25 50 100 150 200
Kilometers


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Large Whales in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
0 25 50 100 150 200
Kilometers


94°W
92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
0 25 50 100 150 200
Kilometers

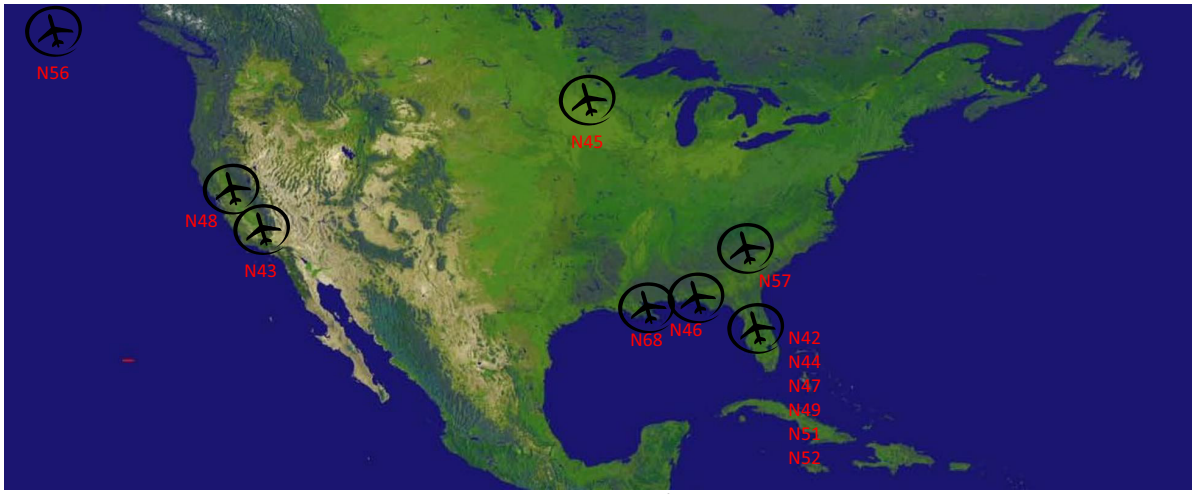
NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

June 21, 2010

** For Internal Use ONLY **

NOAA Aircraft Positions
As of 18 JUN 2010



ID	Type	Status Today
N42	P-3	DWH Loop Current, Departed today @ 0900L, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Flying Cloud, MN. GRAV-D installation.
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Sacramento, CA
N49	G-IV	Tail Doppler Radar testing, MacDill AFB
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Dutch Harbor, AK
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

NOAA Response Operations Activities Report
18 June

Critical Issues for Discussion/Action

- Off-shore oil forecast on hold – coordinated with NMFS
- Items in review:
  - Letter from 22 Senators – under review at DOC
  - Long-term oil trajectory – pending OMB comments
  - Aerial observer training – this weekend, Mobile AL, 13 trainees
  - Loop Current product – under review at DOC

Key Results



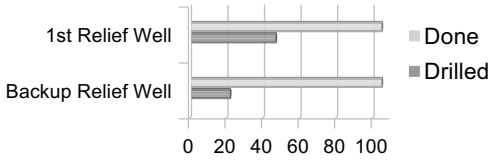
USCG C-130 Overflight out of Clearwater, FL
M/V Becker Florida Peninsula Sentry ship
Both looking for oil north of Florida Keys

Today's Activities

- Robert now NOLA CP:
  1250 Poydras St, New Orleans, LA 70113
- Florida Peninsula Command Post stood up in Miami
- ERMA demo with ADM Allen
- Working on materials to communicate nature of risk to South Florida
- NRT meeting held
- Reviewed Incident Specific Addendum to NCP

Upcoming Activities

- Long-term oil movement release
- Communicating risk to South Florida
- FDA Food desk activated to address seafood contamination issues and liaise with National Center for Health Services



Seafood Safety Daily Report
Reported from Seafood inspection Program, National Seafood Inspection Laboratory and Northwest Fishery Science Center
Thursday, June 17, 2010

Seafood Inspection Program (SIP):

- Steven Wilson, Peter Koufopoulos, Nancy Beck and Jeff Bigler of the EPA worked to finalize the re-opening protocol. This was generally accepted by the Gulf States on the States Call today.
- SIP personnel, led by Robert Downs, is in the final day of the third States Sensory Screener Class in Pascagoula, MS.

Northwest Fishery Science Center (NWFSC):

- Three NWFSC staff are in Pascagoula assisting NSIL staff in preparing for analysis fish and shellfish to be shipped for chemical analyses.
- NWFSC is continuing chemical analysis of blue crab muscle and hepatopancreas (tomalley).

National Seafood Inspection Laboratory (NSIL)

- Manually generated & QA-ed seafood sample status summary from seafood safety sample spreadsheets and related documentation.
- Identified seafood processing training facility in Pascagoula (owned by Mississippi State University) as candidate for use in increasing NSIL's seafood sample capacity.
- Evaluating data received to date in regards to seafood safety sample receipt, log-in, and processing; for purpose of determining data base structure and format in order to design an efficient sample log-in and tracking system.
- Programming database front end for seafood safety sample data management
- Hosting SIP Sensory Analysts and NWFSC staff.
- Hosting SIP Sensory Training Session for group of State personnel.

NOAA Data and Information Management Activities Report
June 18, 2010
Information as of June 18, 2010

Critical Issues for Discussion/Action

None

Key Results

Regarding Data.gov, the site will be available at www.data.gov/restorethegulf -- but will not go live until the actual www.RestoreTheGulf.gov site goes live--live date postponed until Monday at the earliest.

EPA identified four components they want to have added into geoplatform.gov. These files have sampling locations only -- with hyperlink back to www.epa.gov/bpspill to obtain the sampling data. EPA continues work on additional services that will contain the same points along with data. Ultimately getting the points and data showing up in geoplatform.gov.

Yesterday's Activities Recap

Current Unified Command site deepwaterhorizonresponse.com site is migrating to restorethegulf.gov as early as tomorrow June 18, and the geoplatform.gov/gulfresponse is in a very prominent location on this new website (snapshot attached). The restorethegulf.gov site will also have a prominent link to data.gov. Additionally, a separate data.gov oil spill site (maybe www.data.gov/bpoilspill) is in development and may go live tomorrow as well.

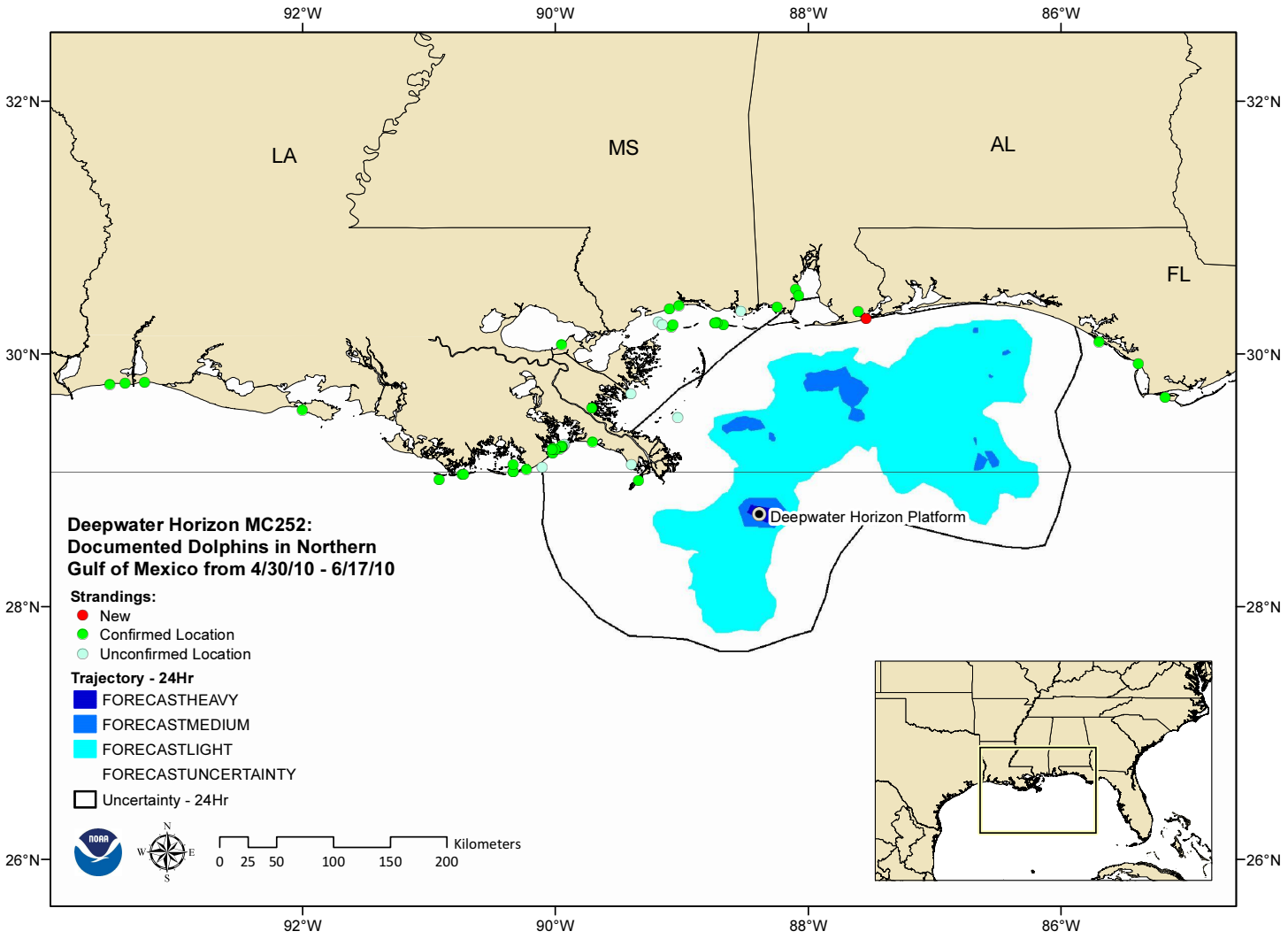
EPA data public release is now tied to the data.gov and restorethegulf.gov development. Coast Guard is working the migration of BP data to the Coast Guard environment and then replication to NOAA for ERMA or geoplatform.gov. DHS considers this option to be suboptimal, so we are reviewing options. NOAA reviewed the current BP data base and many of the layers are duplicative or already incorporated within ERMA. Additionally, most of the BP database lacks attribution, and some BP data would be restricted access and not for public display due to security restrictions.

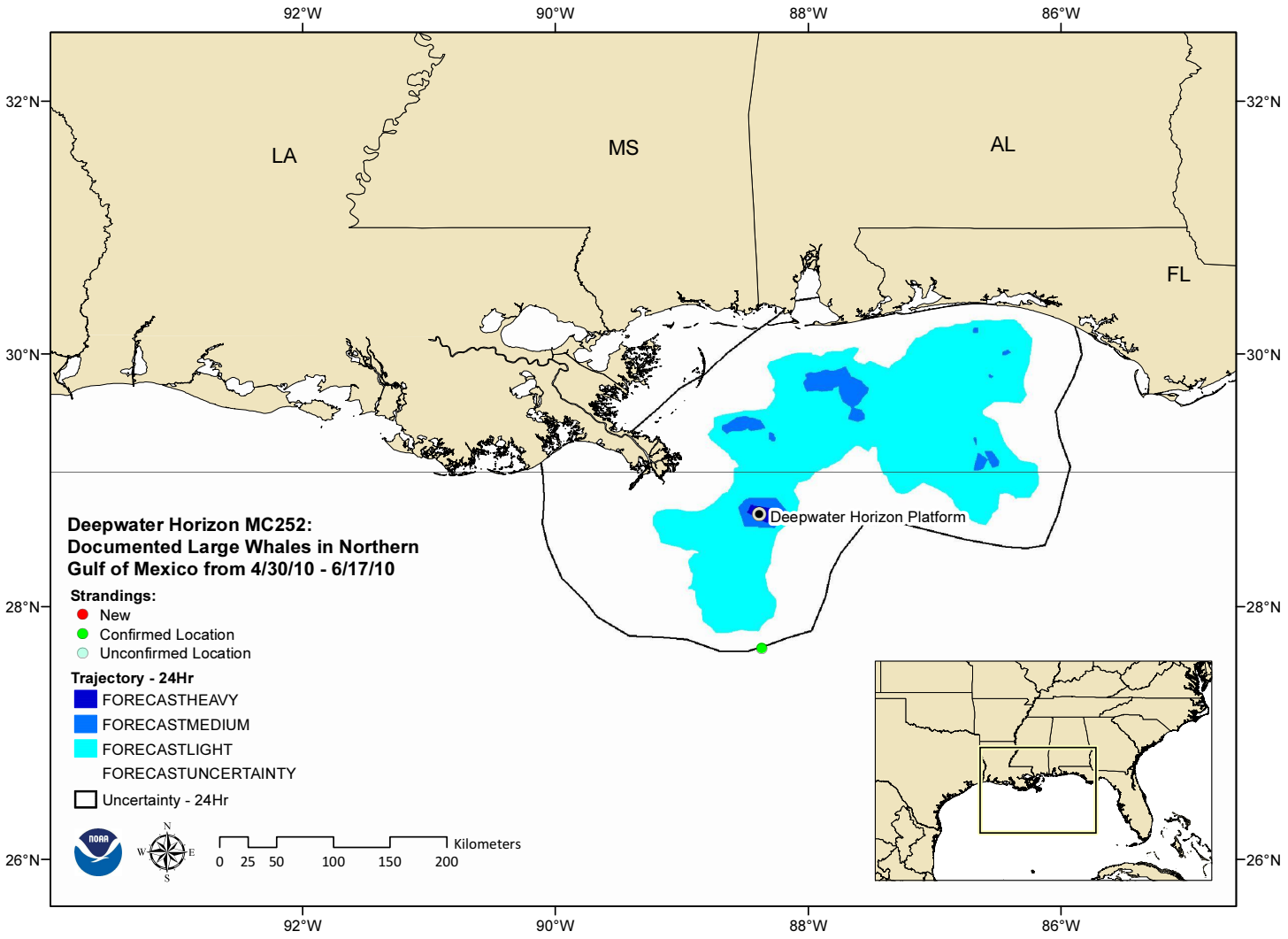
Upcoming Activities

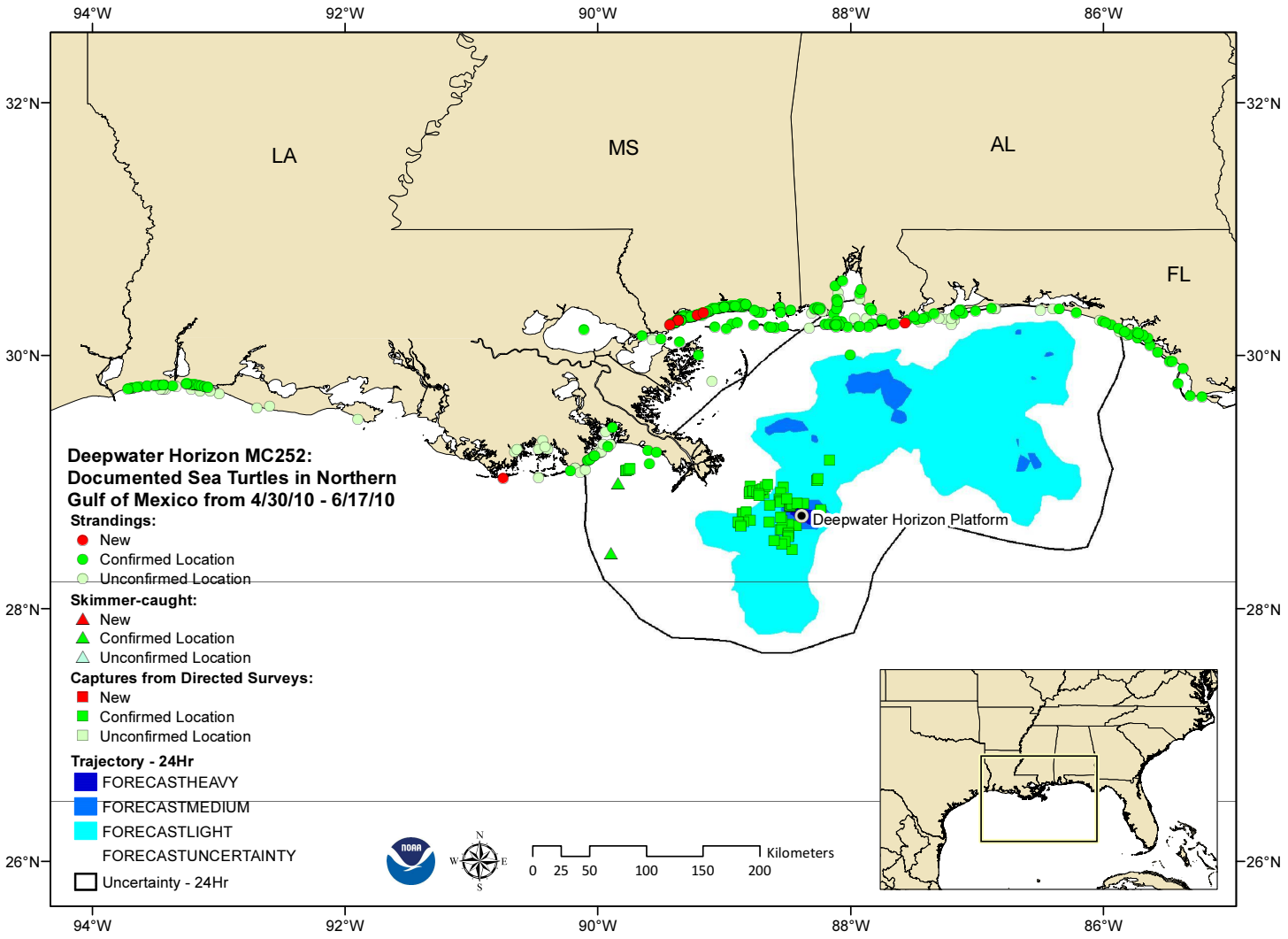
A demo of geoplatform.gov is scheduled for Tracy Waring's DWH Integrated Services Team Tuesday June 22 at FEMA HQ.

Effort to consolidate BP and government geo spatial data is underway. Coast Guard migrating BP GIS capabilities and data into their environment to share the data with ERMA government and public viewers. Coast Guard GIS services not to be used as the COP viewer in the Unified or Area commands-- ERMA is to serve that role.

Tentative meeting scheduled for Tuesday June 22 evening with Federal Geospatial leads to discuss how take advantage of the energy and interest and continue to build out the concepts of the Geospatial Platform.


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
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Kilometers


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LA
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Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Large Whales in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
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Confirmed Location
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30°N
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LA
MS
AL
FL
Deepwater Horizon MC252:
Documented Sea Turtles in Northern
Gulf of Mexico from 4/30/10 - 6/17/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Skimmer-caught:
New
Confirmed Location
Unconfirmed Location
Captures from Directed Surveys:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
Deepwater Horizon Platform
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Kilometers

Update through June 17, 2010 (as of 1800)

Marine Mammal and Sea Turtle Health and Response

Noteworthy Developments During this Reporting Period

- Increase of 8 turtle strandings (1 dead in LA, 3 dead and 3 live in MS, 1 dead oiled in AL from June 16)
- Increase of 1 in the number of dolphin strandings (1 live sub adult dolphin was trapped between two oil booms in FL. Responders were able to move outer boom so dolphin could swim out on its own. There was no visible oil on the dolphin or in the area where the dolphin was found, but oil was on the outside of the two booms, therefore the dolphin was classified as oiled).
- The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.

Sea Turtles

Total Turtle Numbers
469 total sea turtles verified to date within the "designated spill area" (increase of 8 from June 16 report)

- 397 stranded* (increase of 8 from June 16)
    - 360 of the stranded were found dead (increase of 5 from June 16)
    - 37 of the stranded were found alive (increase of 3 from June 16)
        - 4 recovered alive but died in rehab (no change from June 16)
        - 4 turtles released alive (no change from June 16)
        - 29 live turtles in rehabilitation (increase of 3 from June 16)
- 72 turtles collected during directed turtle sampling efforts (no change from June 16)
    - 66 live turtles in rehabilitation (no change from June 16)
    - 3 turtles collected dead (no change from June 16)
    - 3 turtles died in rehabilitation (no change from June 16)

* For this event, a true turtle stranding is defined as a turtle that washes ashore dead or debilitated or is found floating dead or debilitated in the course of non-directed turtle surveys. Turtles observed and/or captured during directed sampling efforts are not categorized as strandings.

Turtle Necropsy Status (of the 360 dead stranded, 3 dead directed capture, and 7 that died in rehab):

- 7 assessed and unable to perform necropsies (i.e. advance decomposition) (no change from June 16)
- 17 partial necropsies (e.g. due to scavenging or autolysis) (no change from June 16)
- 59 full necropsies performed (no change from June 16)
- 46 carcasses not collected due to decomposition state or unable to recover but marked and/or buried (no change from June 16)
- 241 carcasses to be necropsied, if decomposition stage warrants (increase of 5 from June 16)

Document ID: 0.7.19.1947.6

- Of the initial 75 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

Information on Signs of Sea Turtle Oiling:

- To date, visible evidence of oil has been documented externally on 5 dead stranded sea turtle and 6 live stranded turtles (2 of which were caught in skimming operations).
- To date, visible evidence of oil has been documented externally on 69 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

Historical Sea Turtle Strandings:

- The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-17 is 142.
- This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. The breakdown by state for the range of animals historically stranding in the month of June (2005-2009) is as follows:
    - Louisiana: 0-3 stranded sea turtles
    - Mississippi: 0-1 stranded sea turtles
    - Alabama: 0-4 stranded sea turtles
    - Florida panhandle (Escambia – Wakulla Co.): 5-17 stranded sea turtles
- There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.

Marine Mammals

Total Mammal Numbers

46 dolphins have been verified to date within the "designated spill area" (increase of 1 from June 16).

- 43 were dead stranded* dolphins (no change from June 16)
- 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding and one that stranded live in boom and was freed immediately (increase of 1 from June 16)

1 dead stranded sperm whale has been verified to date within the "designated spill area" (no change from June 16)

* Under the Marine Mammal Protection Act Section 409.3, a marine mammal stranding is defined as an event in the wild where:

- A marine mammal is dead and is on the beach or shore of the United States or in waters under the jurisdiction of the United States (including any navigable waters); OR
- A marine mammal is alive and is on a beach or shore of the United States and unable to return to the water, on a beach or shore of the United States and, although able to return to the water, is an apparent need of medical attention or in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance.

Document ID: 0.7.19.1947.6

Update through June 17, 2010 (as of 1800)

Dolphin Necropsy Status (of the 43 dead stranded and 2 live stranded dolphins that died or were euthanized):

- 15 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 16)
- 10 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 16)
- 7 full necropsies performed (increase of 1 from June 16)
- 11 verified strandings but animals not collected due to stage of decomposition or unable to recover (no change from June 16)
- 2 carcasses to be necropsied, if decomposition stage warrants (decrease of 1 from June 16)
- Necropsy results are pending for all animals necropsied to date.

Whale Necropsy Status (of the 1 dead stranded):

- 0 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 16)
- 0 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 16)
- 0 full necropsies performed (no change from June 16)
- 1 verified stranding but animal not collected due to stage of decomposition or unable to recover (no change from June 16)
- 0 carcasses to be necropsied, if decomposition stage warrants (no change from June 16)

Information on Signs of Mammal Oiling:

- Dolphins: Three of the verified dolphins had evidence of external oil on the tongue and/or body and therefore were classified as oiled. However, we are unable at this time to determine whether the two dead animals were externally oiled pre- or post-mortem. All other necropsy findings are pending.
- Whales: The verified whale had no evidence of external oil.

Historical Dolphin Strandings

- The total number of dolphin strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 17 is 15.
- This is higher than the number of marine mammal strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. In part, this may be a reflection of increased detection and reporting and the lingering effects of an earlier observed spike in strandings for the winter of 2010.
- The breakdown by state for the range of animals historically stranding in the month of June (2003-2007) is as follows:
    - Louisiana: 0-5 stranded dolphins
    - Mississippi: 0-1 stranded dolphins
    - Alabama : 0-1 stranded dolphins
    - Florida panhandle: 0-4 stranded dolphins

Document ID: 0.7.19.1947.6

Historical Whale Strandings

- The total number of whale strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 17 is 1.
- There are no records of stranded whales in the Gulf of Mexico for the month of June (2003-2007).

Summary of Action Plan Items:

- A marine mammal carcass retrieval and disposal plan and a sampling and disposal plan for dead marine mammals observed by NOAA vessels are being finalized.

Document ID: 0.7.19.1947.6

NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

June 21, 2010

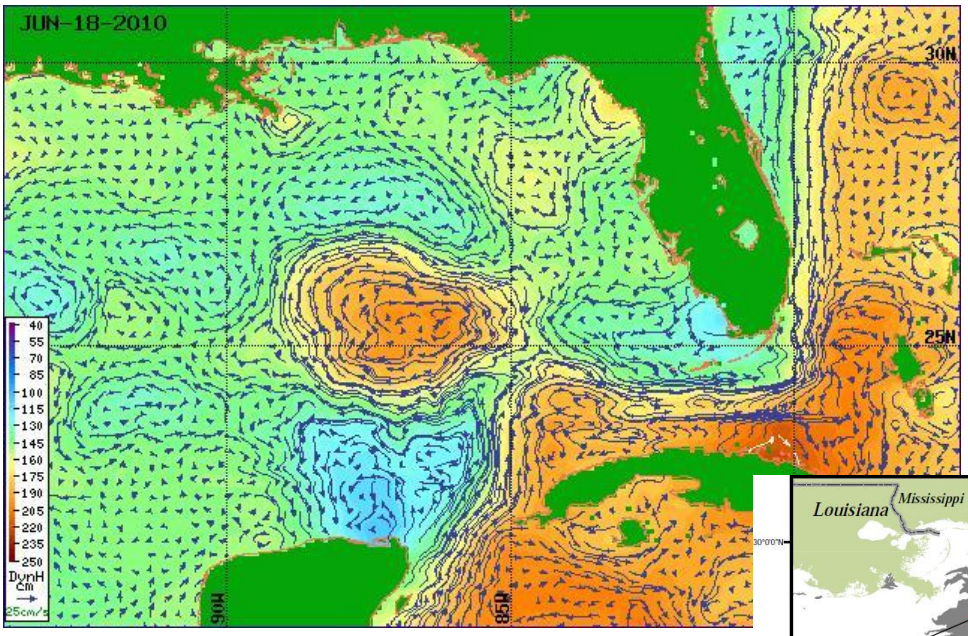
** For Internal Use ONLY **

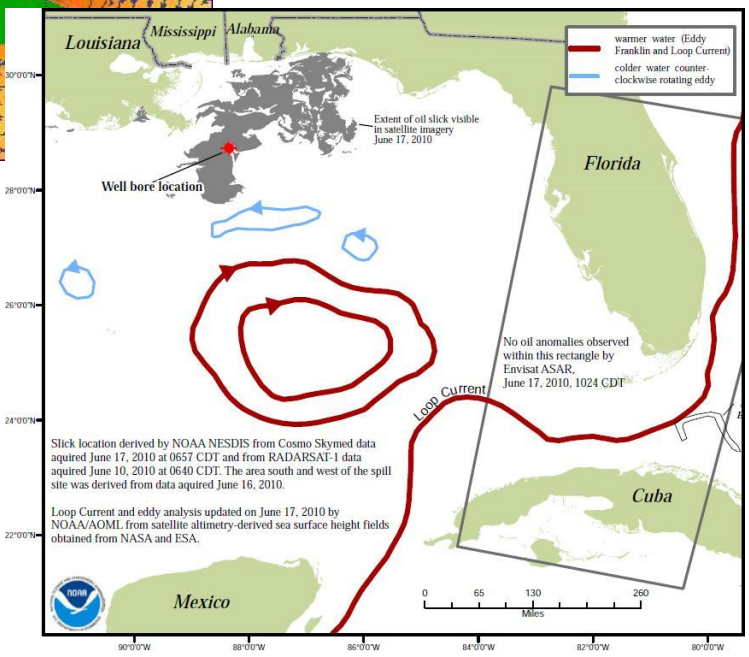
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Topic Areas

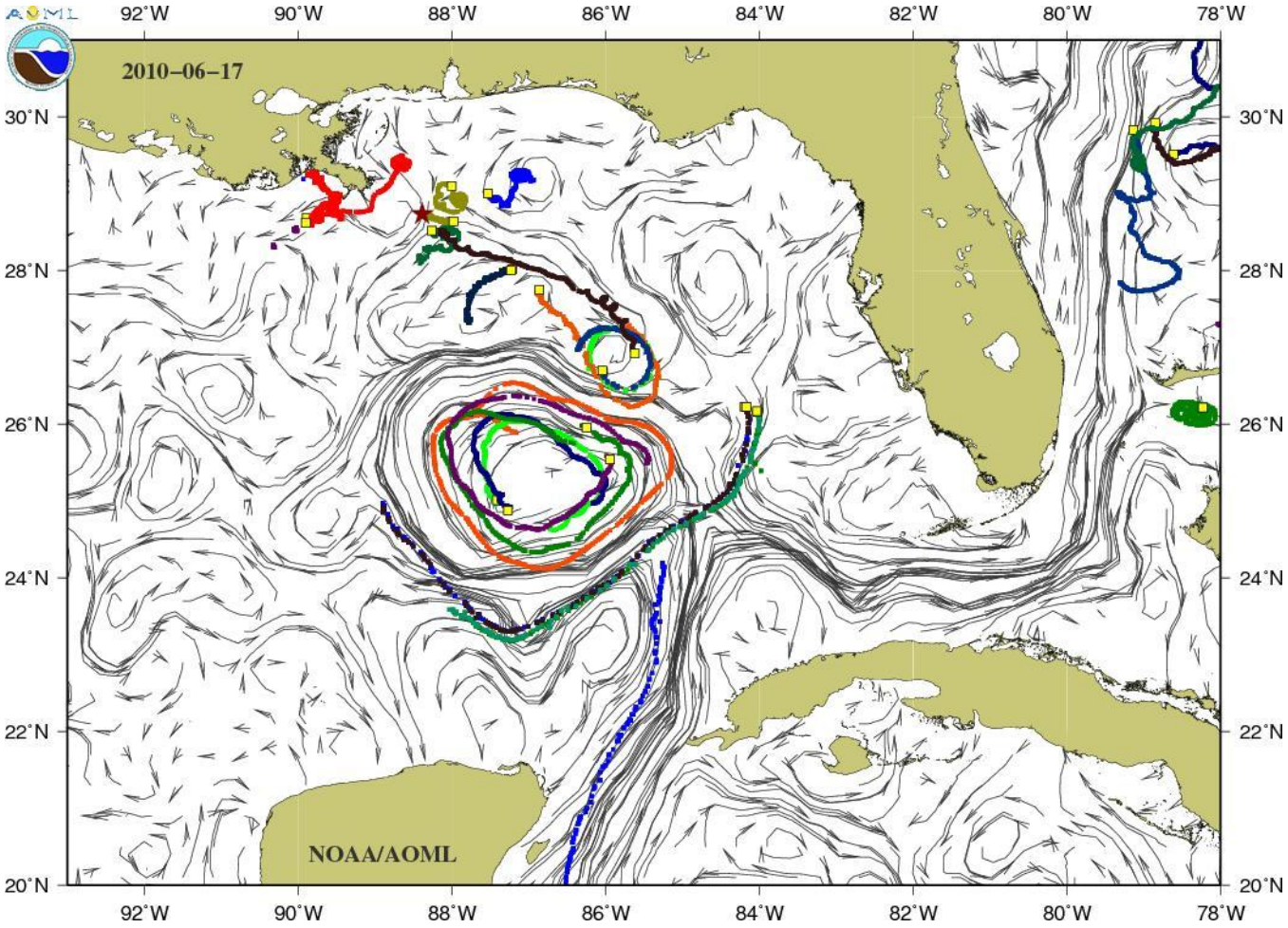
- Loop Current Dynamics
- Protected Species Status
  - Turtles
  - Dolphins
  - Whales
- Seafood Safety Sampling
- NOAA Assets
  - IOOS gliders
  - Planes, Vessels and Charters

Loop Current Discussion for June 18, 2010

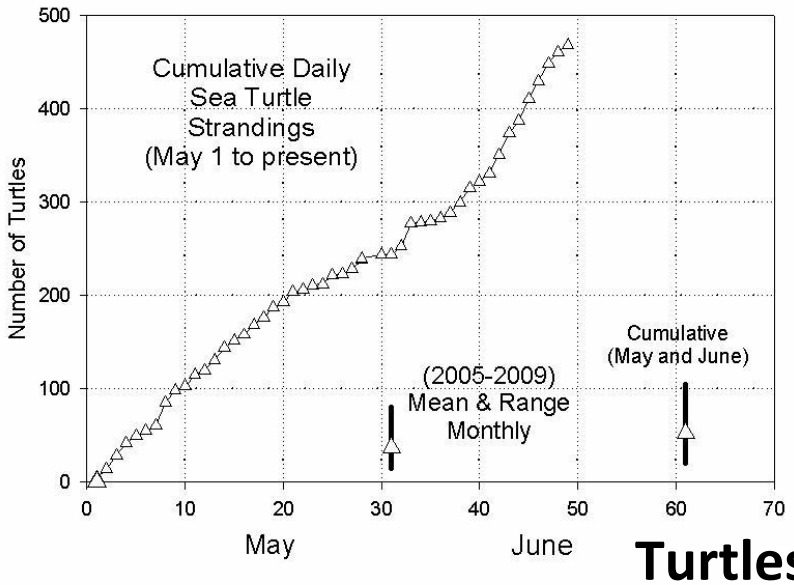


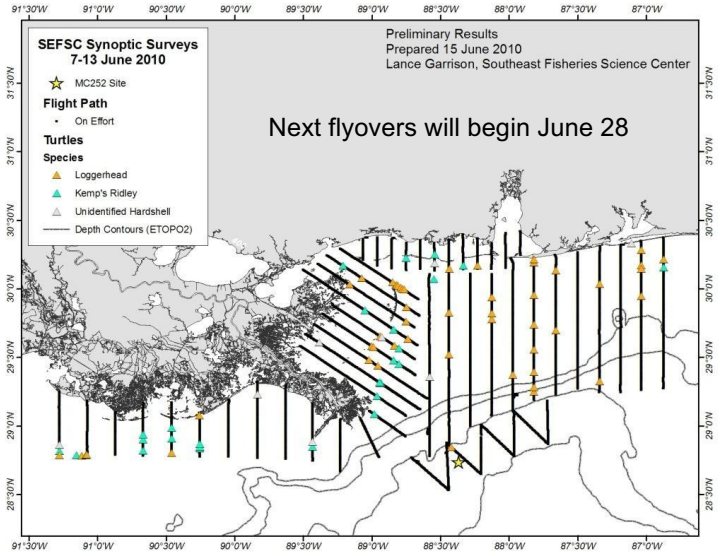


- The large loop eddy (Eddy Franklin) continues to be mostly isolated from the Loop Current.
- Inflow from Yucatan continues to mostly bypass eddy Franklin and flow more directly into the Florida Straits.
- There is potential for full attachment in the next few days to weeks.



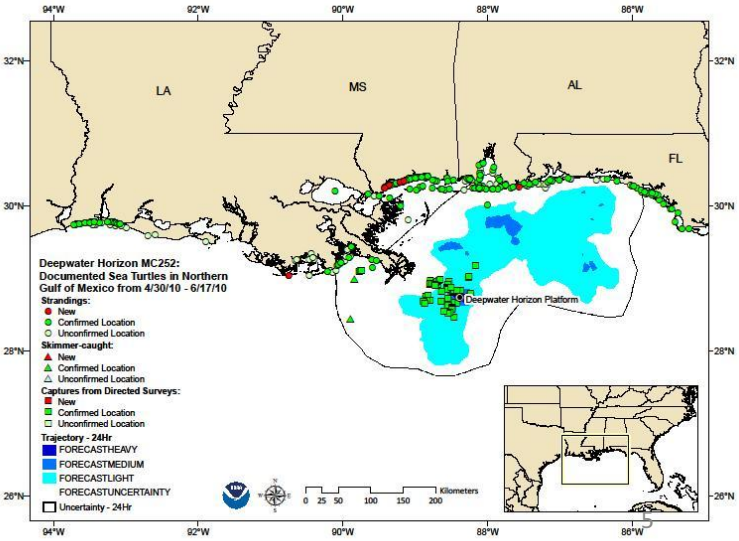
15 day surface drifter trajectories (starting points indicated by squares)

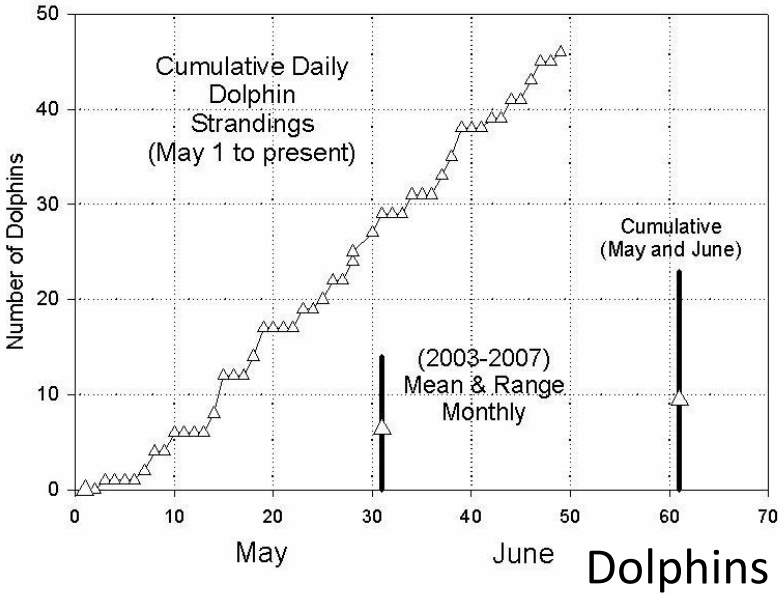


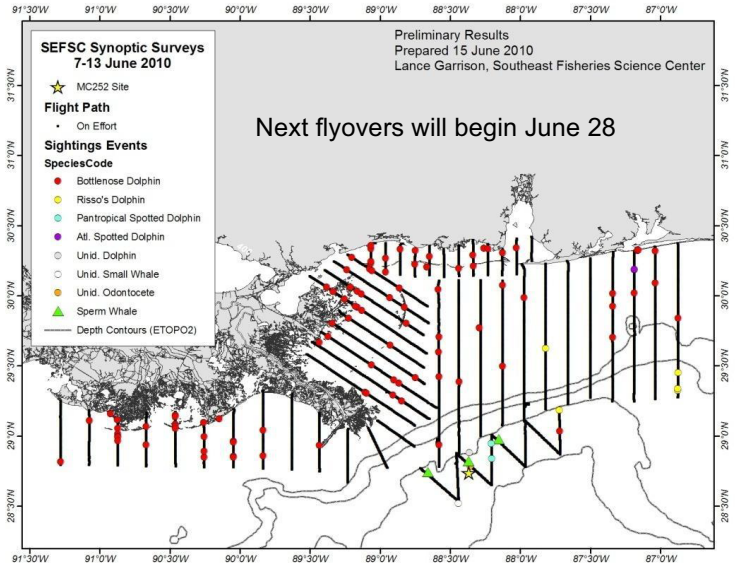


Turtles

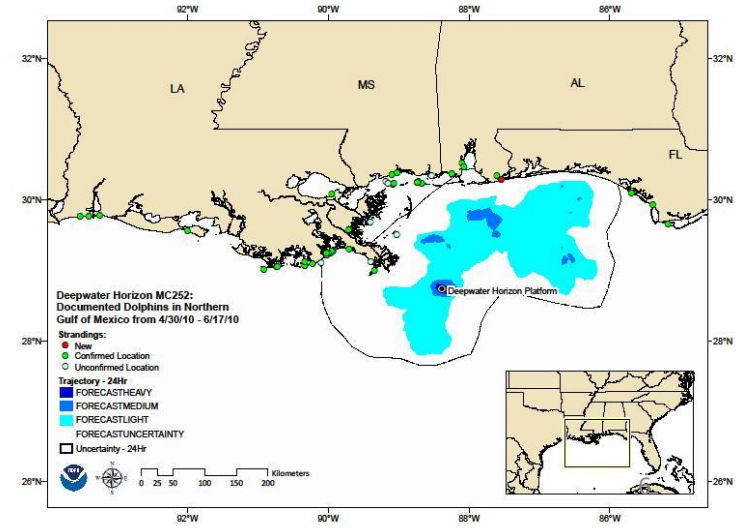
Turtle Status	
Total Verified Stranded Turtles	**469**
Total stranded turtles found dead	363
Total live stranded turtles currently in rehabilitation	95
Total live stranded turtles that died in rehabilitation	7
Total live stranded turtles released	4
Turtle Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	59
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	241







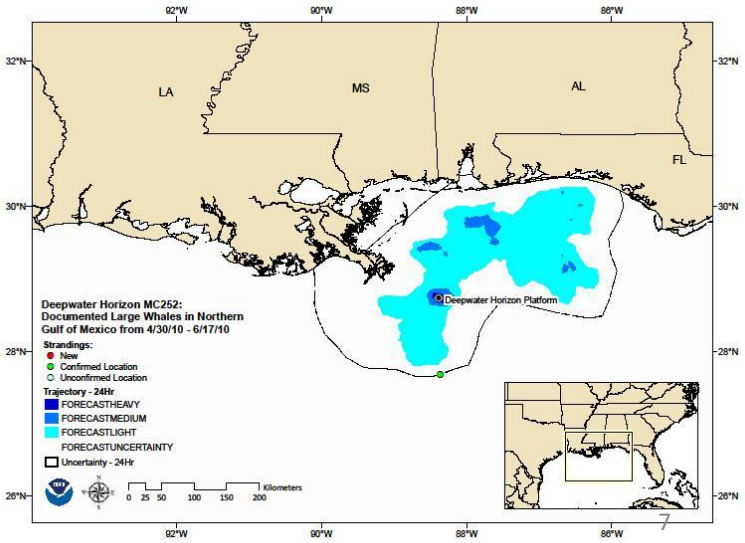
Dolphin Status	
Total Verified Dolphins	**46**
Total dead stranded dolphins	43
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	2
Total live released dolphins	1
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	15
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	10
Number of full necropsies performed	7
Verified strandings but animals not collected due to stage of decomposition or unable to recover	11
Carcasses to be necropsied, if decomposition stage warrants	2

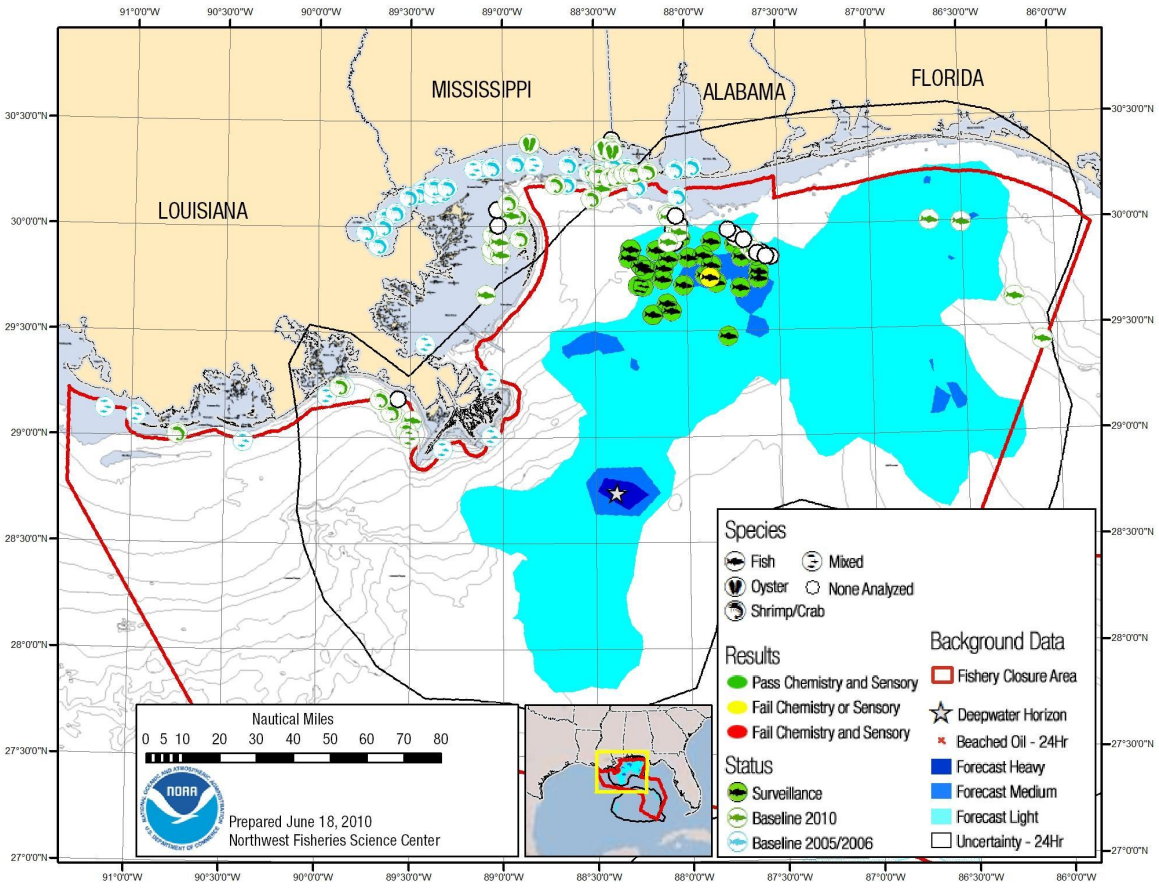


Whales

- The NOAA Ship *Pisces* reported a dead 25 ft sperm whale located 150 miles due south of Pascagoula, MS on June 15, 2010.
- The whale was decomposed and heavily scavenged by sharks.
- There was no oil in the vicinity.
- The whale was photodocumented, sampled (skin/blubber, external swab), and marked with blue paint to reduce resighting/resampling.
- NOAA and the Unified Command Wildlife Branch have had numerous reports of sperm whales sighted swimming in the oil, but this is the first confirmed report of a dead whale since the Deepwater Horizon oil spill began.
- Sperm whales are the only endangered resident cetacean in the upper Gulf of Mexico. Their prime habitat and feeding area are in the upper Gulf offshore area, they feed and live at depth in areas where undersea and aerial dispersants and oil have been present for many weeks, and they feed on deepwater squid which may also be impacted by the oil and dispersants.
- The NOAA Ship *Gordon Gunter* sailed yesterday for a multi-week cruise to do photo-identification, assessments, and biopsy of sperm whales, Bryde's whales, and other offshore cetaceans as well as to tag sperm whales and Bryde's whales and to conduct prey density studies.

Whale Status	
Total Verified Whales	**1**
Total dead stranded whales	1
Total live whales currently in rehabilitation	0
Total live whales stranded that died in care	0
Total live released whales	0
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	0
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	0
Number of full necropsies performed	0
Verified strandings but animals not collected due to stage of decomposition or unable to recover	1
Carcasses to be necropsied, if decomposition stage warrants	0





- Chemical analyses of 13 shrimp and oysters composites passed QA/QC and were posted on the NWFSC website--[results summarized on next slide]--concentrations were well below levels of concern
- Another set of fish and shellfish samples (composites) will be analyzed on GC/MS today
- Additional fish and shellfish samples continue to be processed for chemical analysis

Concentrations (ng/g, wet weight) of selected polycyclic aromatic hydrocarbons measured in edible tissues of shellfish collected in the Gulf of Mexico region as part of the Deepwater Horizon MC Canyon 252- Seafood Safety Response 2010

Species	Region	Collection Date	Closure Area Status	NPH	FLU	ANT/PHN	FLA	PYR	BAA	CHR/Trphn	BaP	LMWAHs	HMWAHs
Pink Shrimp	Chandeleur Sound, MS Sound	-	Baseline	1	<0.32	0.54	<0.18	<0.18	<0.27	<0.31	<0.28	3.6	< LOQ
White Shrimp	Chandeleur Sound, MS Sound	-	Baseline	0.67	<0.25	0.43	<0.15	<0.15	<0.22	<0.25	<0.23	1.9	< LOQ
Pink Shrimp	Chandeleur Sound, MS Sound	-	Baseline	0.72	<0.23	0.43	<0.14	<0.13	<0.20	<0.23	<0.21	2	< LOQ
Pink Shrimp	Northern Gulf of Mexico	-	Baseline	0.83	<0.20	0.4	<0.11	<0.11	<0.17	<0.19	<0.17	2.3	< LOQ
Pink Shrimp	Northern Gulf of Mexico	-	Baseline	0.75	<0.26	0.38	<0.15	0.3	<0.22	<0.25	<0.23	2	0.68
Pink Shrimp	-	-	Surveillance	0.96	<0.24	0.41	<0.15	<0.15	<0.22	<0.26	<0.23	2.5	< LOQ
Pink Shrimp	-	-	Surveillance	0.78	<0.25	0.35	<0.15	<0.15	<0.23	<0.26	<0.23	2	< LOQ
Pink Shrimp	Northern Gulf of Mexico	-	Surveillance	0.79	<0.25	0.37	<0.15	<0.15	<0.23	<0.26	<0.24	2.2	< LOQ
White Shrimp	-	-	Baseline	0.79	0.39	1.3	<0.13	<0.13	<0.20	<0.23	<0.20	5.2	< LOQ
White Shrimp	-	-	Baseline	0.76	0.22	0.58	<0.13	<0.13	<0.20	<0.23	<0.20	2.8	0.19
Brown Shrimp	-	-	Baseline	0.81	<0.22	0.53	<0.13	<0.13	<0.19	<0.22	<0.20	2.5	0.19
White Shrimp	-	-	Baseline	0.82	0.24	0.85	<0.13	<0.13	<0.19	<0.22	<0.20	3.1	< LOQ
Brown Shrimp	-	-	Baseline	0.63	<0.26	0.63	<0.17	<0.17	<0.25	<0.28	<0.25	2.1	< LOQ
Oyster	-	-	-	1.2	2.3	7.17	0.75	0.98	0.4	1.9	<0.24	41	5.2

NPH = napthalene, FLU = Flourene, ANT/PHN = anthracene/phenanthrene, FLA = fluoranthene, CHR = chrysene, BaP = benzo[a]pyrene, BAA = benz[a]anthracene, PYR = pyrene

Lower molecular weight AHs (LMWAHs) < 3 benzene rings; Higher molecular weight AHs (HMWAHs) > 3 benzene rings

Summary Info of US IOOS® Assets deployed 18 June 2010

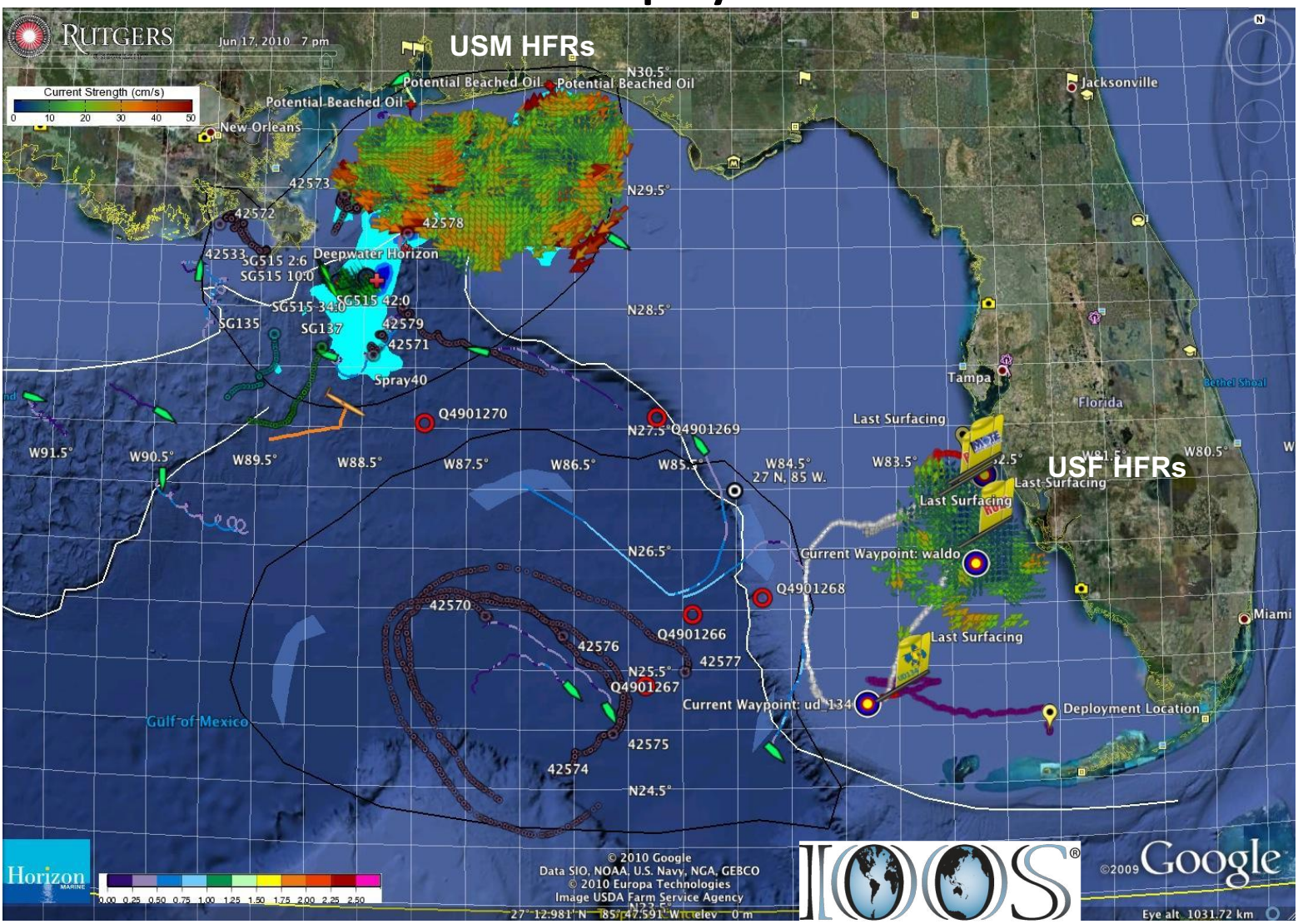
see graphic on next slide

- **Gliders: 8 Deployed by US IOOS Partners**
  - **MACOORA (2-Rutgers "RU21" & "RU23"; 1-Univ. of Delaware "UD134")**
  - **Mote Marine Lab (1 "Waldo")**
  - **GCOOS (1-USM/Univ of Washington-Applied Physics Lab; "SG515")**
  - **SCCOOS (1-Scripps/WHOI; "Spray40")**
  - **US Navy ("SG135", "SG137")**
  - **Glider Note: USF glider that stopped reporting was damaged by a remora fish. Recovered 6/14. Redeployment TBD .**

- **High Frequency Radars (HFRs): 5 operational in the Gulf of Mexico.**
  - **GCOOS (3 – Univ of Southern Mississippi)**
  - **SECOORA (2 –Univ of South Florida). 2 of 3 radars operational. Surface current data available off SW Florida coast from Venice and Naples, FL HFR sites. Target 6/23 to restore Reddington ,FL radar.**
  - **HFR Note: 1-hour average current from the two HFR clusters are displayed**

- **Drifters from Navy and Horizon Marine are displayed**
- **Glider information and data available at http://rucool.marine.rutgers.edu/deepwater**

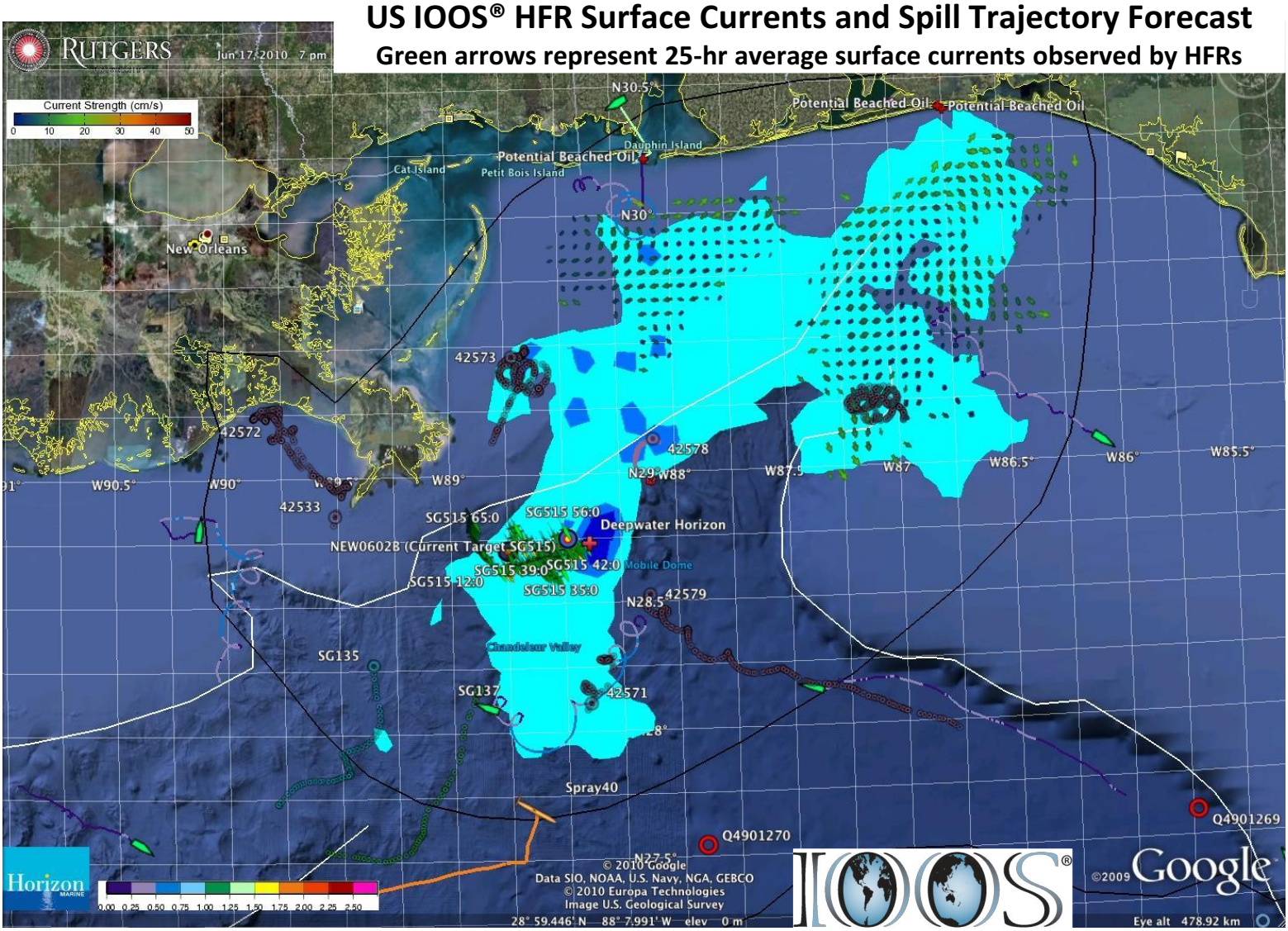
US IOOS® Assets Deployed 18 June 2010



IOOS®
INTEGRATED OCEAN OBSERVING SYSTEM

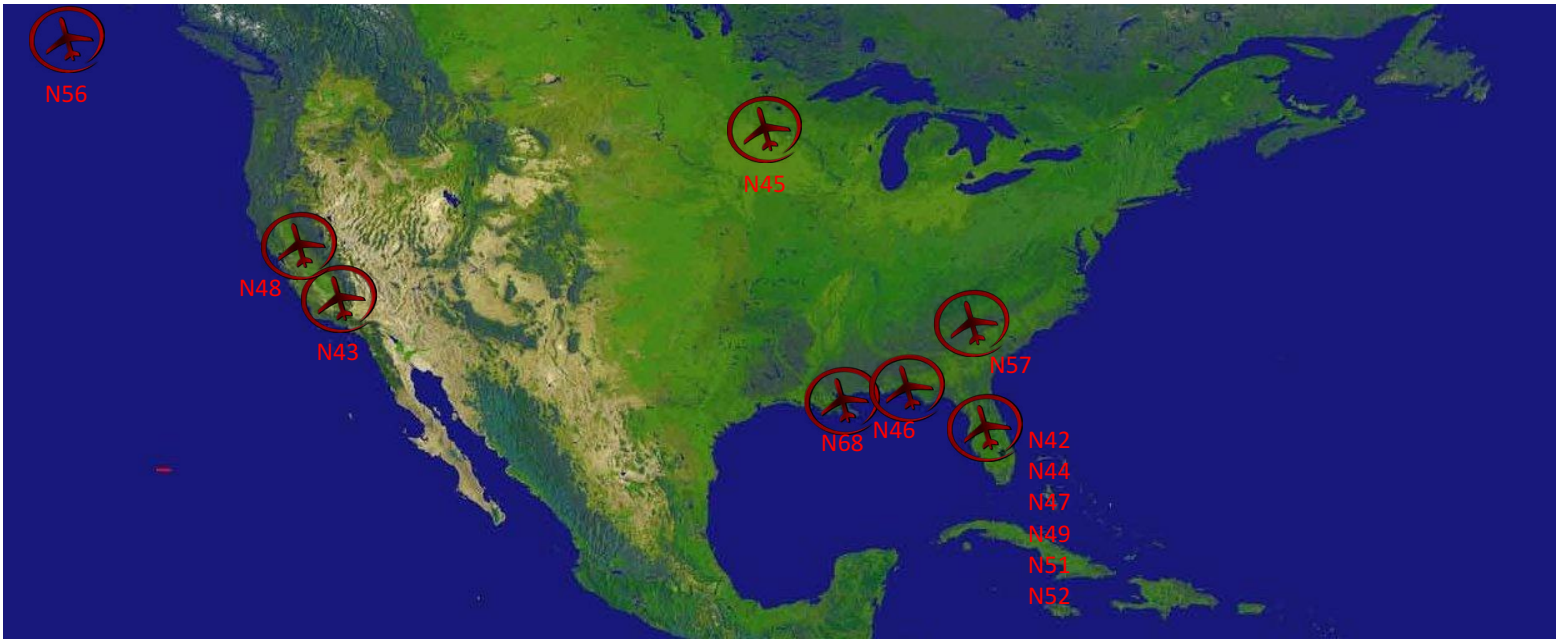
US IOOS® HFR Surface Currents and Spill Trajectory Forecast

Green arrows represent 25-hr average surface currents observed by HFRs



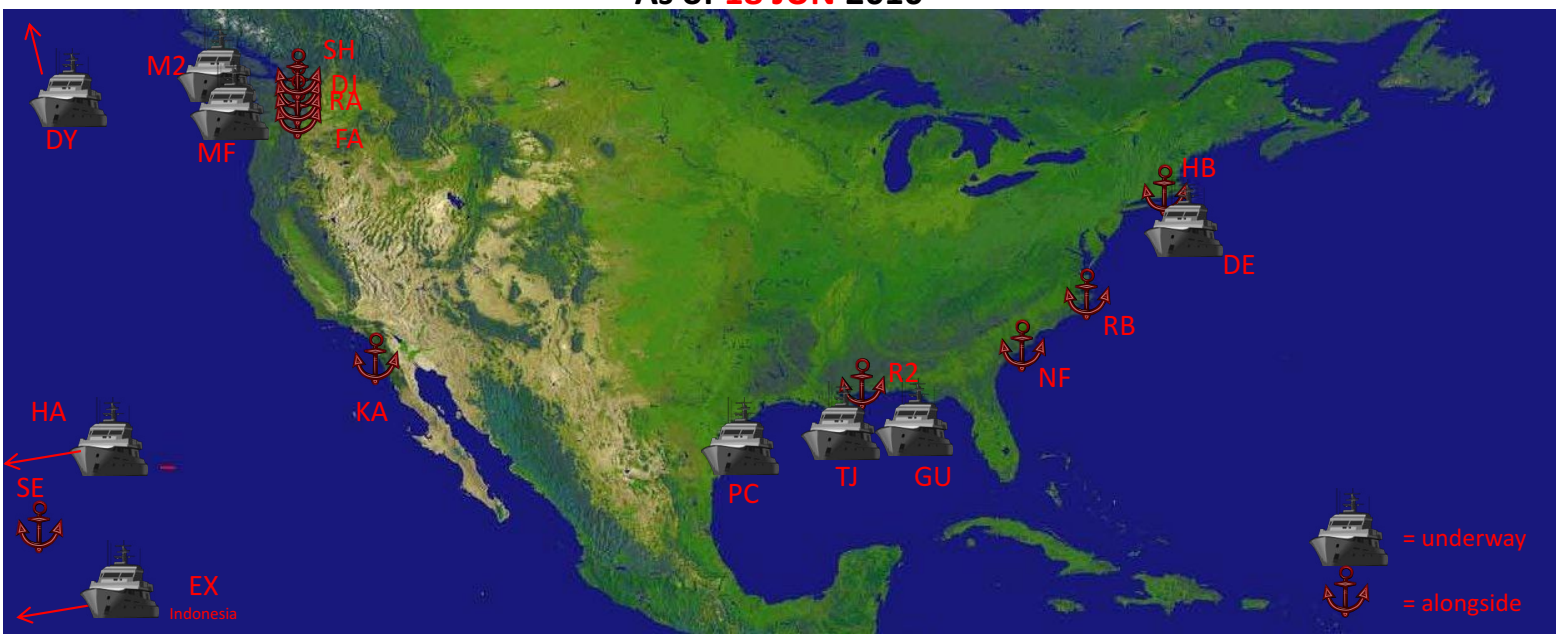
INTEGRATED OCEAN OBSERVING SYSTEM

NOAA Aircraft Positions
As of 18 JUN 2010



ID	Type	Status Today
N42	P-3	DWH Loop Current, Departed today @ 0900L, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Flying Cloud, MN. GRAV-D installation.
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Sacramento, CA
N49	G-IV	Tail Doppler Radar testing, MacDill AFB
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Dutch Harbor, AK
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

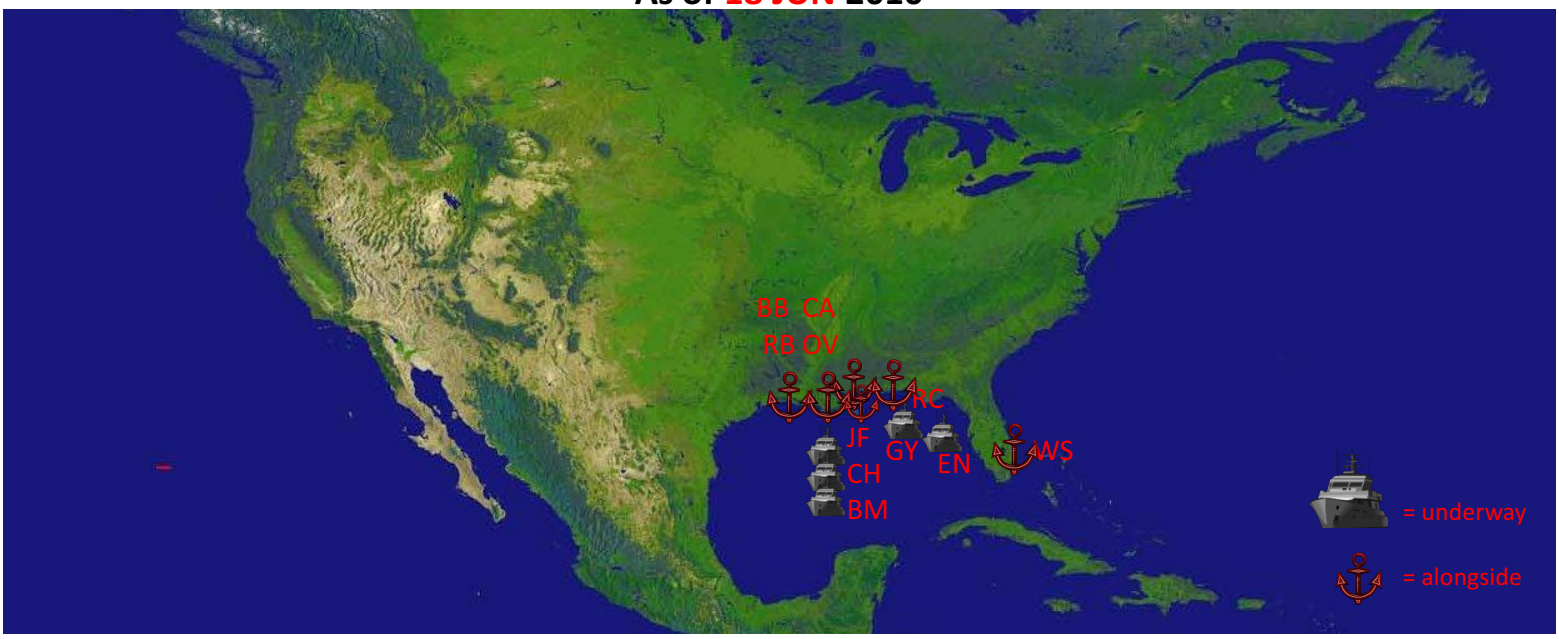
NOAA Ship Positions
As of 18 JUN 2010



ID	Status Today
FA	Alongside Port Angeles, WA. Departure 06/21 for scheduled project
SH	Alongside Seattle, WA. Departure 6/25 for scheduled project
MF	Underway on scheduled project. Arrival 6/21 Seattle, WA
DY	Underway on scheduled project. Arrival 6/24 Dutch Harbor, AK
HA	Underway on scheduled project. Arrival 06/26 Pearl Harbor
M2	Underway on scheduled project. Arrival 07/04 San Francisco
SE	Alongside Pearl Harbor, HI. Departure 7/6 for scheduled project
KA	Alongside San Diego, CA. Departure 7/8 for scheduled project
RA	Alongside Cascade, OR for major repair period
DJ	Alongside Seattle, WA. Decommissioning on week of 08/02
EX	Underway on scheduled project. Arrival 6/20 Bitung, Indonesia

ID	Status Today
DE	Departed Woods Hole, MA 6/18 enroute GOMEX for DWH ops (seafood study). ETA Key West, FL 6/24 for staging, ETD 6/25.
TJ	Departed 6/15 for continued DWH ops (acoustics and water sampling). ETA Key West, FL 7/2
HB	Alongside Newport, RI. ETD 7/6 for scheduled project
NF	Alongside Charleston, SC. Departure delayed to ~6/25 following repairs. Expecting tasking for DWH ops.
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Departed 6/15 for DWH marine mammal survey. ETA Mobile, AL 6/21 for repairs (~ 2 days in drydock) then resume ops. ETA Pascagoula, MS 6/26
PC	Departed 6/14 for scheduled project in GOMEX, no DWH tasking yet. ETA Pascagoula, MS 7/2
R2	Alongside Pascagoula, MS. ETD ~6/19 for sea trials, ~6/20 for DWH shrimp trawl/ichthyoplankton survey (approx 4-5 days), then resume scheduled work.

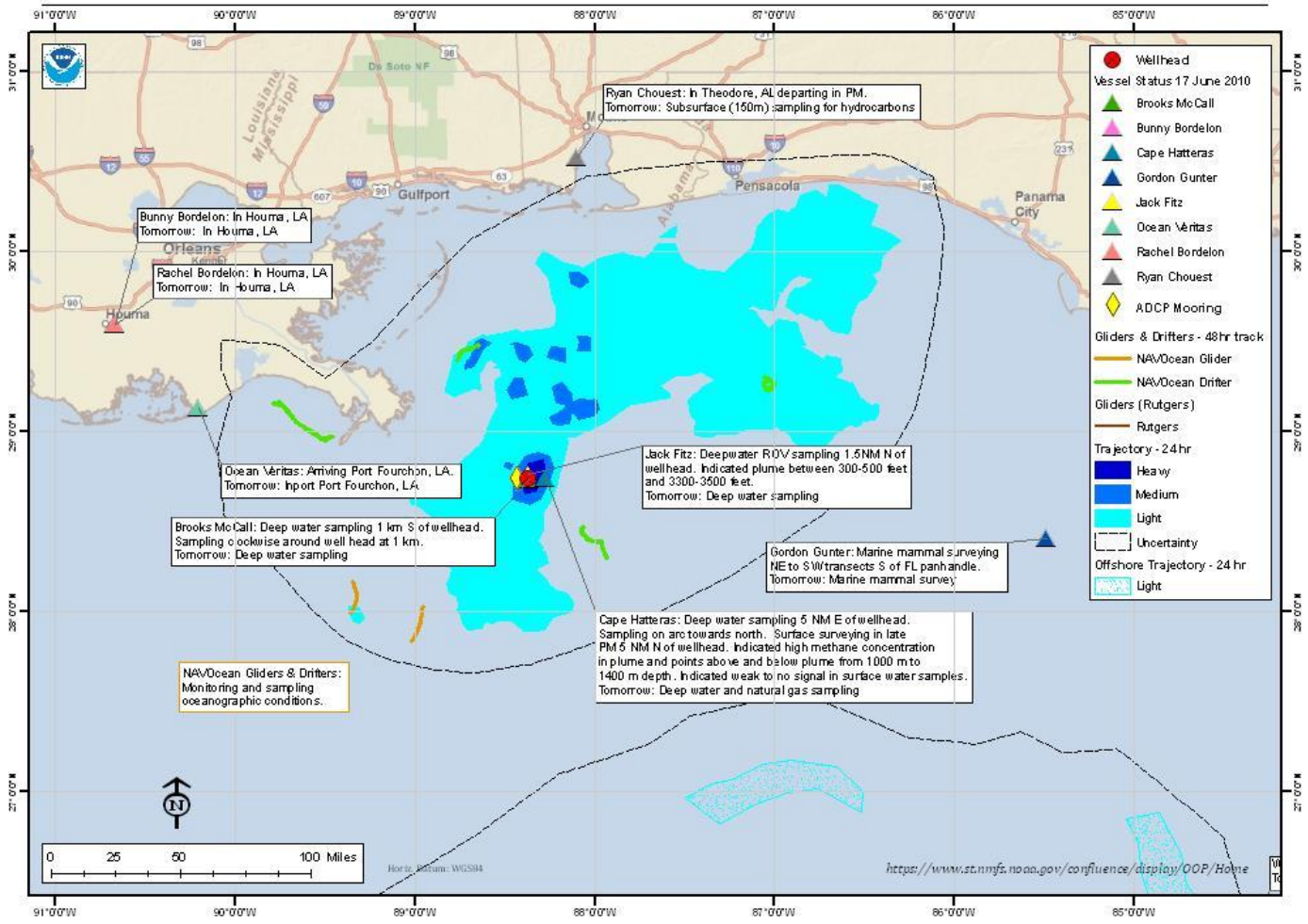
Chartered Vessels and NOAA Small Boats
As of 18 JUN 2010



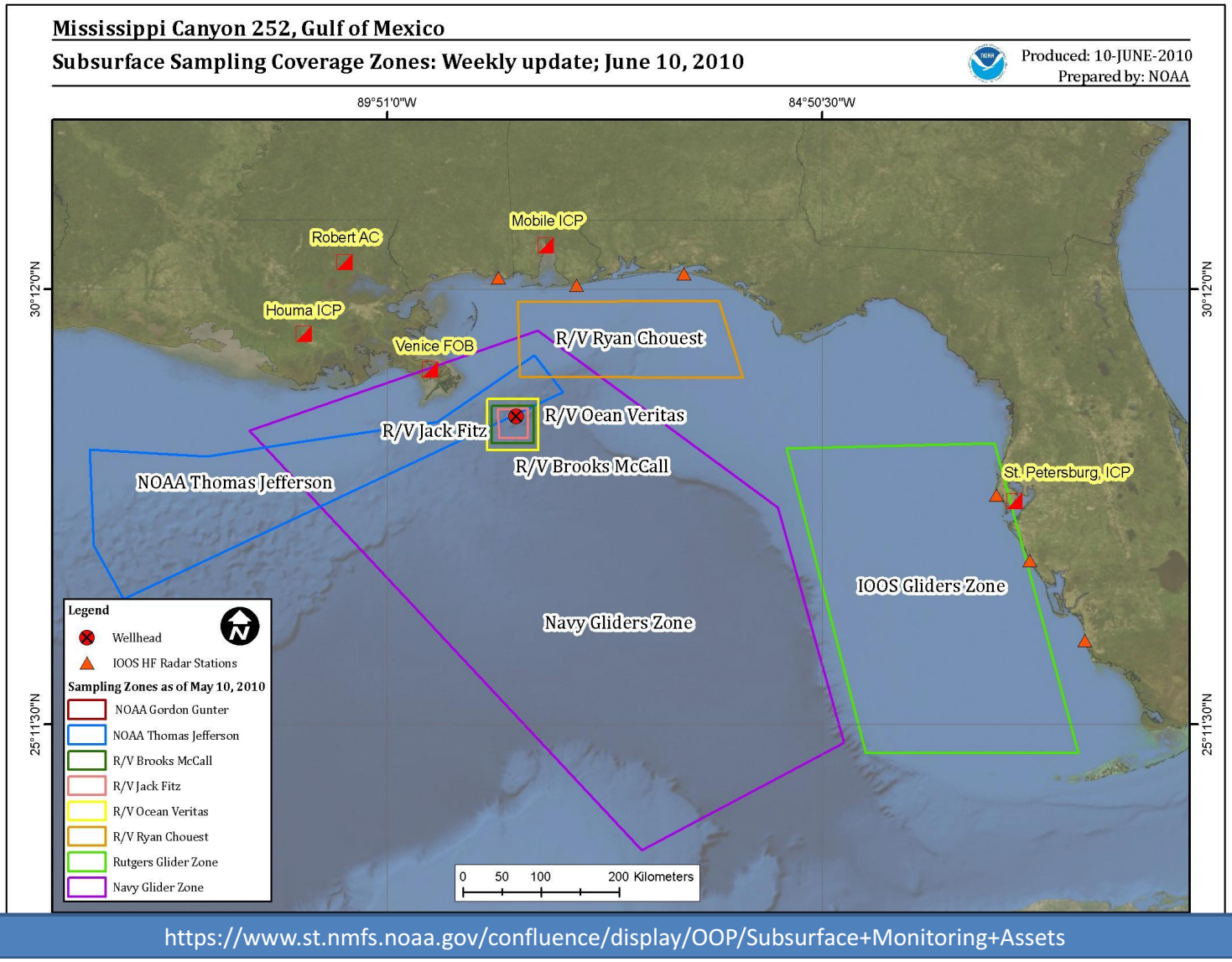
ID	Type	Status Today
BM	R/V Brooks McCall	Deep water sampling 5km N of wellhead and working NE and E at 5km.
BB	M/V Bunny Bordelon	In Houma, LA
CH	R/V Cape Hatteras	Deepwater sampling, CTD's, and surface sampling 5nm N of wellhead.
CA	R/V Caretta	NOAA Small Boat alongside Pascagoula. DWH begin 21 June
EN	R/V Endeavor	In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying four drifters for NMFS.
GY	R/V Gandy	Reef fish surveys out of Panama City, FL.
JF	R/V Jack Fitz	Deepwater ROV sampling W of wellhead at 2km ring.
OV	R/V Ocean Veritas	In Port Fourchon, LA
RB	M/V Rachel Bordelon	In Houma, LA
RC	R/V Ryan Chouest	In Theodore, AL, departing in PM.
WS	R/V Walton Smith	In Miami, FL

Date: 17-June-2010 | Subsurface Monitoring Ship Locations | NEARSHORE

Preliminary findings based on daily communication between assets and Subsurface Monitoring Unit | Deepwater Horizon, Gulf of Mexico



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Assets

Subsurface Monitoring Vessel Assignments

Vessel Assignments for June 18, 2010 to June 20, 2010

Vessel - MMSI	*Type*	*Compliment*	*June 18, 2010*	*June 19, 2010*	*June 20, 2010*
Brooks McCall 338257000	162 ft M/V	32	Deep water sampling 5 km N of well head and working NE and E at 5 km	Deep water sampling	Deep water sampling
Bunny Bordelon 366816890	150 ft OSV	16	In Houma	In Houma	In Houma
Cape Hatteras 366929330	135 ft R/V	24	Deep water sampling, CTDs, and surface sampling 5 NM N of wellhead	Deep water and natural gas sampling, W of well head	Deep water and natural gas sampling
Endeavor 367017340	185 ft R/V		In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying 4 drifters for NMFS	Deep water sampling and AUV	Deep water sampling and AUV
Gordon Gunter 303913000	224 ft R/V	33	Marine mammal surveying NE to SW transects S of FL panhandle, night acoustic surveys cross shelf	Marine mammal survey	Marine mammal survey
Jack Fitz 366765580	165 ft OSV	26	Deepwater ROV sampling W of wellhead at 2 km ring	Deep water sampling	Deep water sampling
NAVOcean Sea Gliders	2 AUV's		Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions
Ocean Veritas 367116090	194 ft M/V	41	Inport Port Fourchon, LA	Inport Port Fourchon, LA	In Port Fourchon, LA
Pisces 369970145	209 ft R/V	38	Reef Fish survey on shelf break from Brownsville to Corpus Christi	Reef Fish survey	Reef Fish survey
Rachel Bordelon 367359570	150 ft OSV	20	In Houma, LA	Acoustic surveys	Acoustic surveys
Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	In Theodore, AL departing in PM	Subsurface (150m) sampling for hydrocarbons	Subsurface (150m) sampling for hydrocarbons

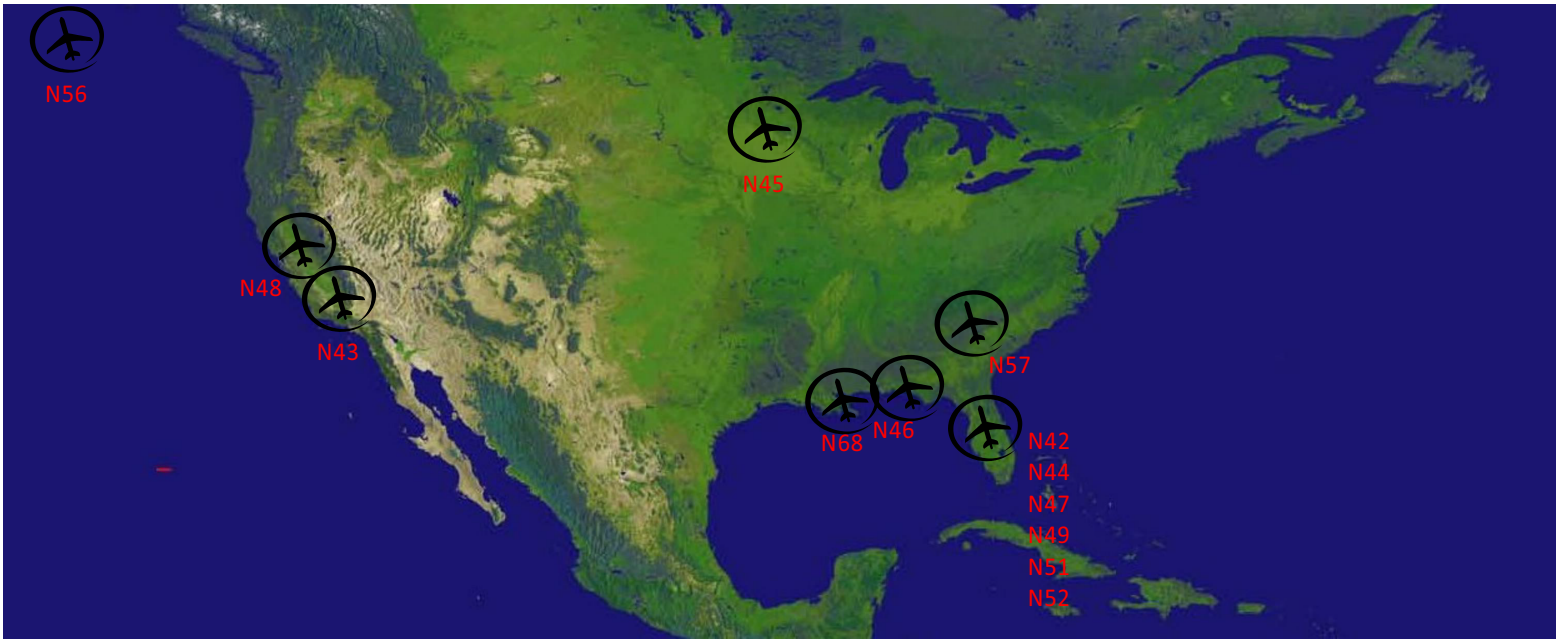
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Vessel Assignments for June 18, 2010 to June 20, 2010

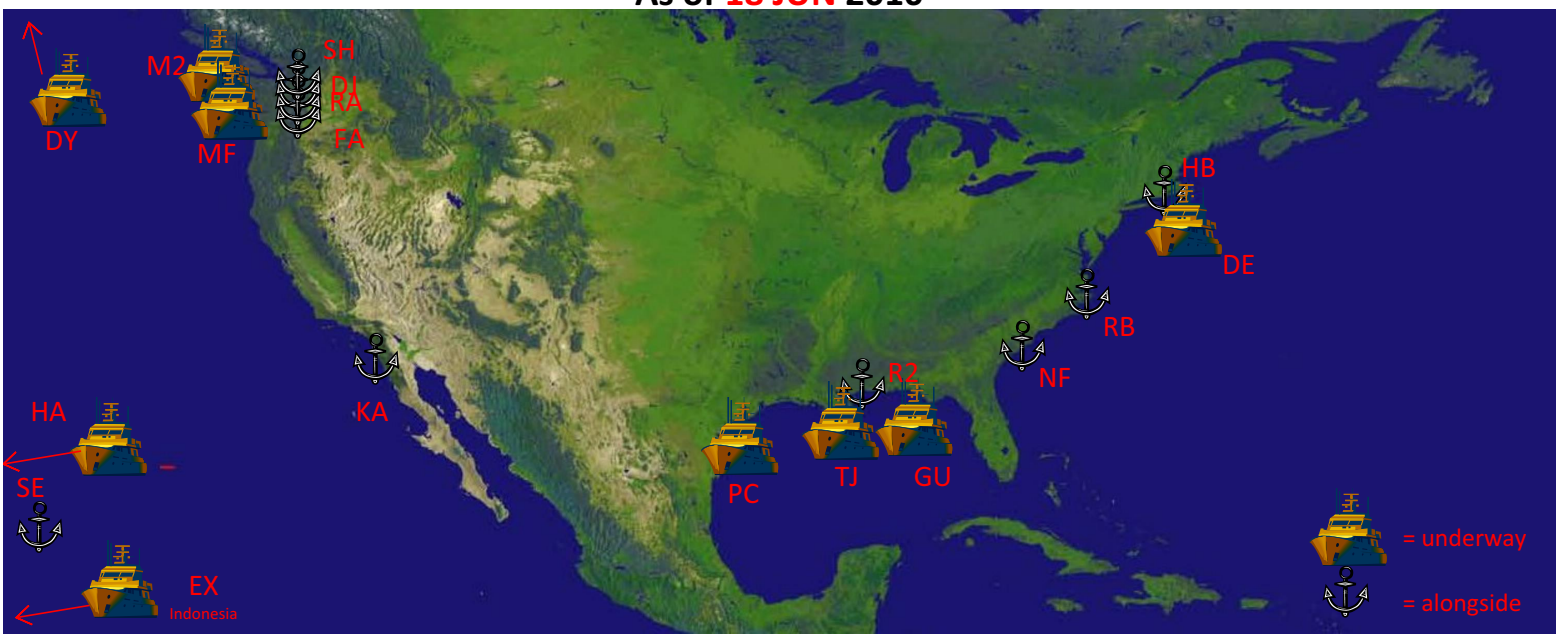
Vessel - MMSI	*Type*	*Compliment*	*June 18, 2010*	*June 19, 2010*	*June 20, 2010*
Thomas Jefferson 369958000	208 ft R/V	33	Establishing baseline with CTD casts towards east, coastal sampling late PM	coastal sampling off LA	Coastal sampling

NOAA Aircraft Positions
As of 18 JUN 2010



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N44	P-3	Maintenance, MacDill AFB
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N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Sacramento, CA
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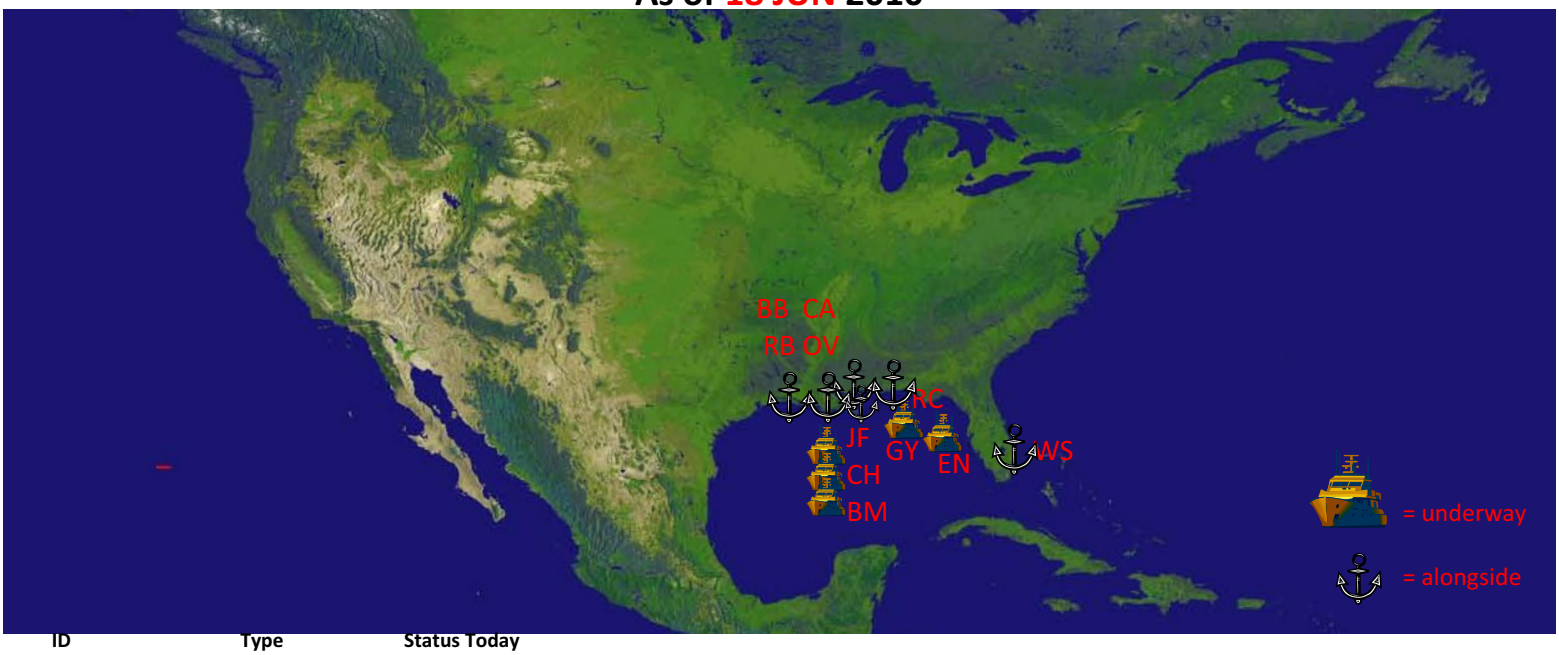
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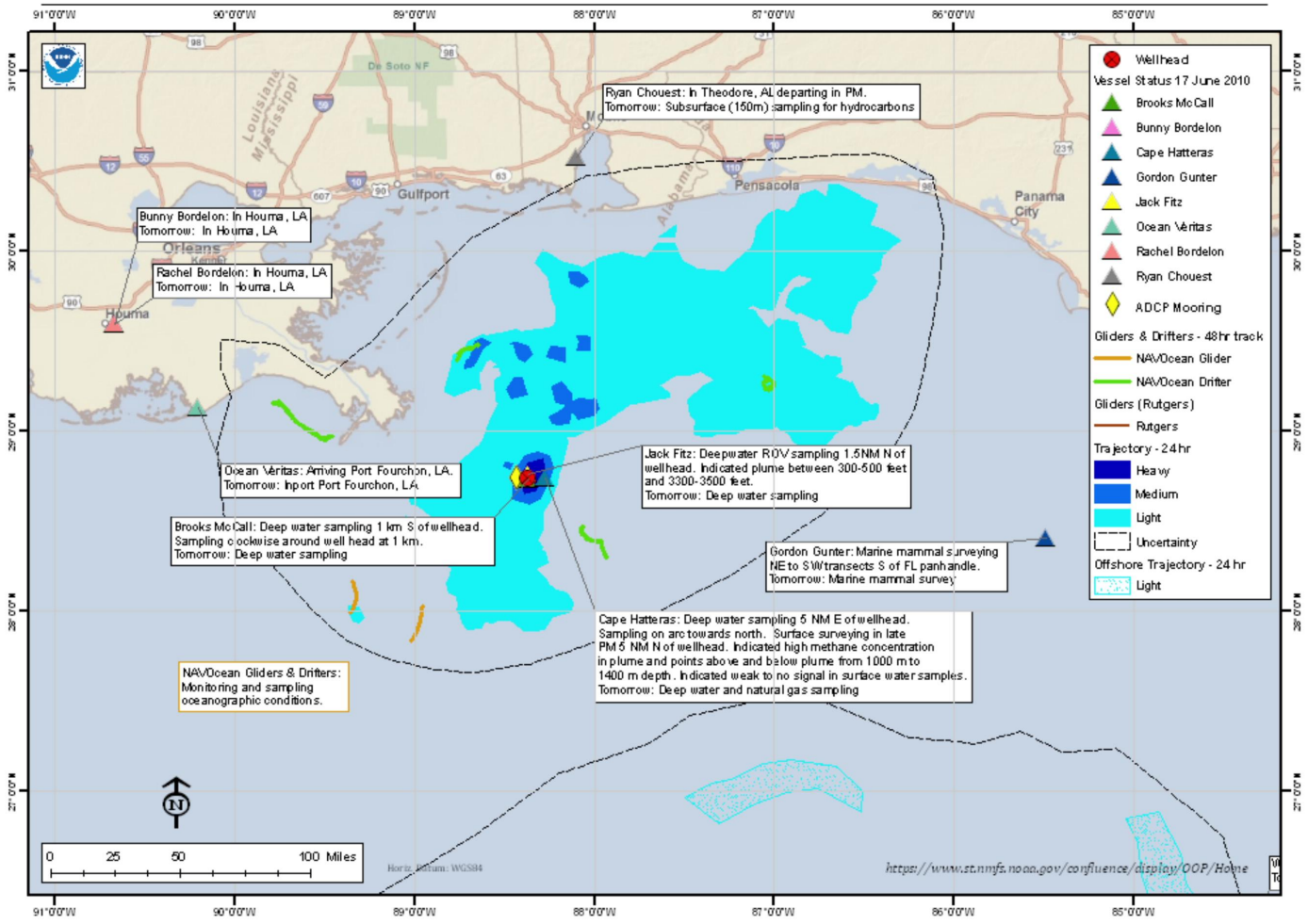
Chartered Vessels and NOAA Small Boats
As of 18 JUN 2010



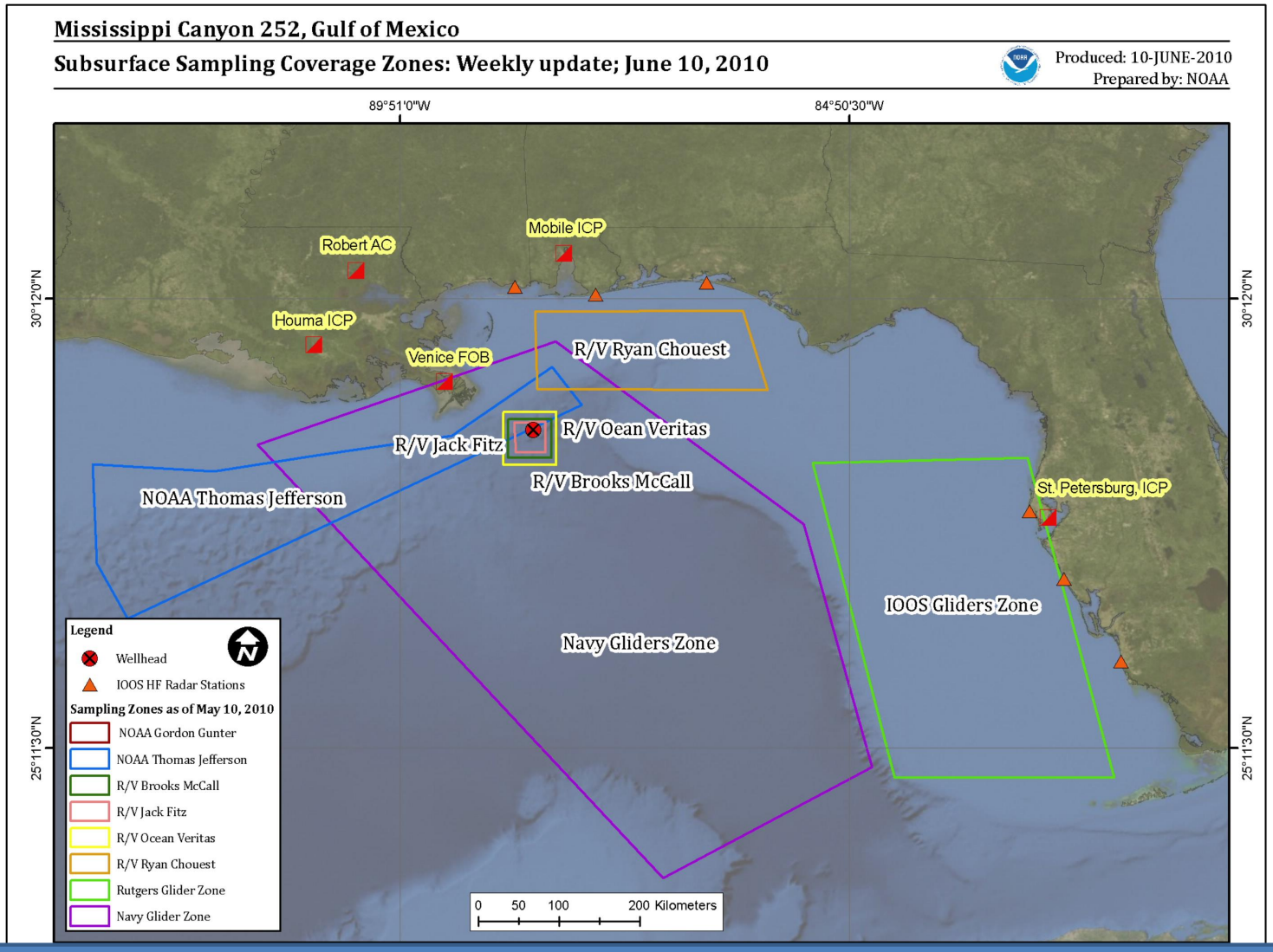
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Date: 17-June-2010 | Subsurface Monitoring Ship Locations | NEARSHORE

Preliminary findings based on daily communication between assets and Subsurface Monitoring Unit | Deepwater Horizon, Gulf of Mexico



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https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Assets

Subsurface Monitoring Vessel Assignments

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Pisces 369970145	209 ft R/V	38	Reef Fish survey on shelf break from Brownsville to Corpus Christi	Reef Fish survey	Reef Fish survey
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Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	In Theodore, AL departing in PM	Subsurface (150m) sampling for hydrocarbons	Subsurface (150m) sampling for hydrocarbons

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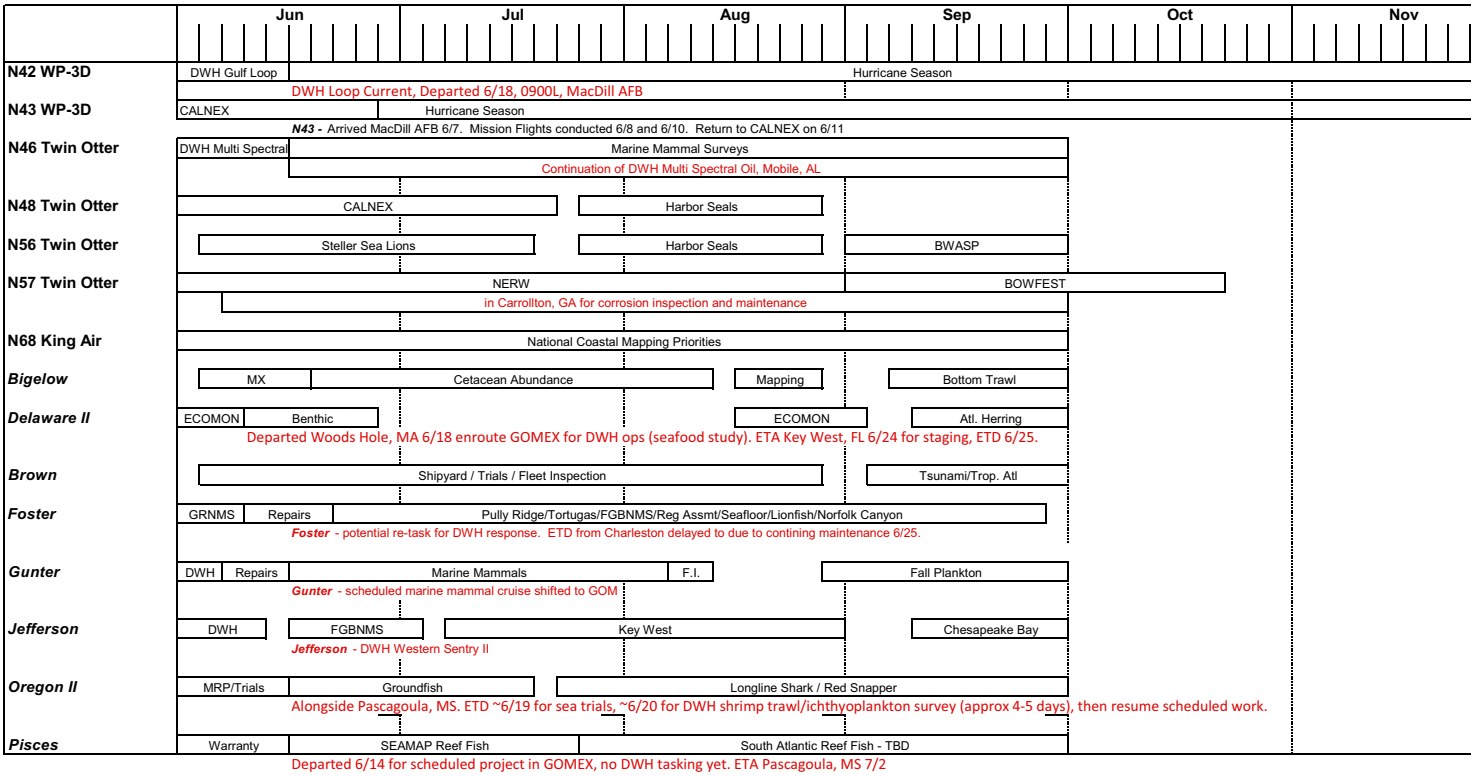
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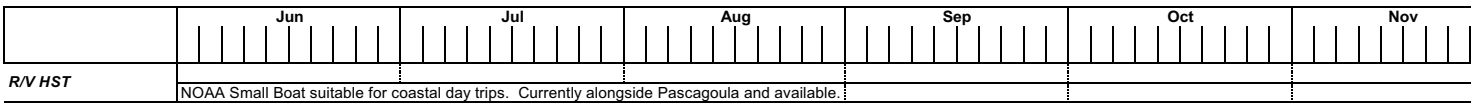
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OMAO Assets (as of 6/18/10)



NOAA Line Office Assets



3/29/2011

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R/V Gandy	NOAA Small Boat conducting reef fish surveys out of Panama City, FL.			
R/V Caretta	NOAA Small Boat alongside Pascagoula. DHW begin 6/21.			
R/V Harold B	Scheduled to conduct trap/video surveys out of Panama City the reamainder of the month.			

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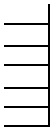
25' Parker NOS small boat w/ twin outboards in Charleston, SC, available for deployment and trailerable

Other Assets

	Jun	Jul	Aug	Sep	Oct	Nov
Beau Rivage	In Panama City gearing up bottom long line operations					
Brooks McCall	Deep water sampling 5km N of wellhead and working NE and E at 5km.					
Bunny Bordelon	In Houma, LA					
Capt Hatteras	Deepwater sampling, CTD's, and surface sampling 5nm N of wellhead.					
Endeavor	In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying four drifters for NMFS.					
Jack Fitz	Deepwater ROV sampling W of wellhead at 2km ring.					
Ocean Veritas	In Port Fourchon, LA					
Pelican	LOOP current study for MMS scheduled to begin 6/27					
Rachel Bordelon	In Houma, LA					
Ryan Chouest	In Theodore, AL, departing in PM					
Walton Smith	In Miami, FL					
IOOS Gliders	DWH* Monitoring for oil in Florida coastal waters from Tampa to FL Keys. *No end date specified for gliders.					
NAVO Gliders	Monitoring and sampling oceanographic conditions					

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3/29/2011

3/29/2011

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Proposed NOAA Asset DWH Response Schedule

SHIPS				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
Gunter	June 5	June 26	Repairs/ABS inspection scheduled for 6/5-6/14 GU-10-02 Leg 1 - Marine Mammals 06/15 – 06/26	Departed 6/15 for DWH marine mammal survey. ETA Mobile, AL 6/21 for repairs (~ 2 days in drydock) then resume ops. ETA Pascagoula, MS 6/26
Foster	June 5	June 19	None: NF-10-05, Grays Reef Comparison Cancelled.	a/s Charleston, SC for z-drive repairs. Cancelled leg 2 of GRNMS project in order to complete repairs and allow time to transit to GOM in support of DWH efforts. Departure delayed to June 25, GOM arrival ~ June 30th. Awaiting final DWH project instructions and tasking.
Thomas Jefferson	June 15	tbd	TJ-10-03 FGBNMS	Departed Galveston, TX 6/15 for continued DWH ops (acoustics and water sampling). Arrival Key West, FL 7/2
Oregon II	June 21	July 5	Rd-10-01 Summer groundfish Leg 2 loses 9 DAS (much of the area typically surveyed during this project is likely going to be off limits due to the oil.)	Alongside Pascagoula, MS. ETD ~6/19 for sea trials, ~6/20 for DWH shrimp trawl/ichthyoplankton survey (approx 4-5 days), then resume scheduled work.
Delaware II	tbd	tbd	DE-10-05 Benthic Habitat	Departed Woods Hole, MA 6/18 enroute GOMEX for DWH ops (seafood study). ETA Key West, FL 6/24 for staging, ETD 6/25.
Foster	July 5	July 18	NF-10-07 Tortugas Eco Reserve loses all 7 DAS	Allows 2 weeks for z-drive repairs alongside in Pascagoula
Gunter	July 18	August 4	GU-10-02 Marine Mammals, Leg 3 – lose 14 DAS. Currently this project is scheduled for Atlantic Ocean, but there are discussions of moving this effort to the Gulf instead. If project	GU would have to resupply fresh water one time during this mission period

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			remains in Atlantic, GU isn't an option	
Pisces	August 5	September 3	PC-10-04 CoOp Reef Fish Survey loses 23 DAS	This 30 day mission would have to be broken into 2 or 3 legs w/ T&Gs for water
Oregon II	September 3	September 28	Rd-10-02, Shark/Snapper Longline loses all of Leg 4 and most of Leg 3. Estimate losss of ~20 DAS. However, much of the project's survey area is impacted by oil	This 26 day mission would have to break into 2 or 3 legs for water and reprovisioning

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Aircraft				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
N42RF WP-3D		June 15	Hurricane Season	Funding ends on June 15. Gulf Loop Current flights could be rescheduled around any tasking for Hurricanes. Hurricane taskings would delay Gulf Loop Current flights by several days. DWH Loop Current flight, departed 6/18, 0900L, MacDill AFB
N43RF WP-3D	TBD	TBD	CALNEX (OAR California air quality study)- Potential loss of 1 to 3 days	Reassignment to DWH for air quality study per OAR request. Arrived MacDill 6/7. Mission Flights conducted 6/8 and 6/10. Returned to CALNEX 6/11.
N46RF Twin Otter	April	September 30	Alaska Marine Mammal Surveys	Extending Multi Spectral Oil Analysis flights beyond June 15 will impact Alaska Marine Mammal surveys. Additionally, engine overhaul date will be accelerated due to increased utilization and installation of extended range fuel tank will be delayed.
N57RF Twin Otter	June 7	September 30	Northeast Right Whale / BOWFEST	DWH Marine Mammal flights tasking resumed June 7. Anticipated schedule is approximately 5 flights every 14 days. Tasking could be flown on Twin Otter N46RF but belly port will be unavailable for use. Additional crew would be required for N46F due to crew duty day limitations.
N68RF King Air	April	September 30	National Coastal Mapping Priorities	Risk of not meeting GPRA goals for shoreline mapping.

NOAA Response Operations Activities Report
18 June

Critical Issues for Discussion/Action

- Off-shore oil forecast on hold – coordinated with NMFS
- Items in review:
  - Letter from 22 Senators – under review at DOC
  - Long-term oil trajectory – pending OMB comments
  - Aerial observer training – this weekend, Mobile AL, 13 trainees
  - Loop Current product – under review at DOC

Key Results



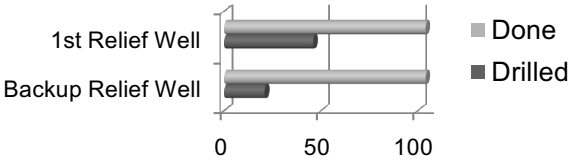
USCG C-130 Overflight out of Clearwater, FL
M/V Becker Florida Peninsula Sentry ship
Both looking for oil north of Florida Keys

Today's Activities

- Robert now NOLA CP:
  1250 Poydras St, New Orleans, LA 70113
- Florida Peninsula Command Post stood up in Miami
- ERMA demo with ADM Allen
- Working on materials to communicate nature of risk to South Florida
- NRT meeting held
- Reviewed Incident Specific Addendum to NCP

Upcoming Activities

- Long-term oil movement release
- Communicating risk to South Florida
- FDA Food desk activated to address seafood contamination issues and liaise with National Center for Health Services



Column1	Drilled	Done
Backup Relief Well	21	104
1st Relief Well	46	104

To resize chart data range, drag lower right corner of range.

Received(Date): Sat, 19 Jun 2010 16:35:03 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: DWH ACTIONS AND UPDATES 06.19.2010
To: DWH leadership <DWH.Leadership@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

DWH ACTIONS and UPDATES, 06.19.2010.xls
Mammal_Turtle_Data_18_June.xls
Mammal_Turtle_Data_18_June_Summary.xls
MMST Health and Stranding Update 06-18-10.doc
OMAO DWH Aircraft Tasking - Program Impacts 061410.docx
OMAO DWH Ship Tasking - Program Impacts 061410-1.docx
OMAO_Assets_Gantt_Chart_061910.xlsx
Proposed OMAO Asset DWH Response Schedule 061910.doc

RESPONSE OPERATIONS - NIC/ICC/NRT
No Report

SCIENCE
o NOAA scientists have been routinely analyzing water samples taken in and around the well head at depth to monitor for the presence of dispersant compound and in particular the major COREXIT components of propylene glycol (1,2-propanediol) and 2-butoxy ethanol. These ""solvents"" are up to 30% of the volume of the dispersant mixture. We have not seen in any of the samples analyzed (~150), any of these substances (with Method Detection Limits (MDL) of 0.6 and 0.2 ppm respectively).
o A modified form of the NOAA draft data and clearance policy was submitted to the JAG to potentially use it as the clearance policy of that interagency group
*
LMR*
Fisheries Closures
There was no change to the closed area for June 19, 2010, The closed area remains 80,806 sq mi (209,286 sq km) and covers about 33% of the GOM EEZ.

Seafood Inspection
On June 18 there was a conference with Department of Commerce Public Affairs to go over the seafood safety process and methods for tracking samples. There was confusion by the press over a statement regarding samples we had received which turned out to be completely false.
Next week we will issue an update on the status of sampling cruises and samples being processed and analyzed.

Marine Mammal and Turtle Health and Stranding
Increase of 11 turtle strandings (1 dead in FL, 1 dead in AL, 4 dead in MS, 2 dead in LA and 1 live oiled from off of LA; 1 dead from FL & 1 dead in LA from June 17)
Increase of 1 dolphin stranding (correction of 1 dead from LA from May 29)
Dolphin necropsy status was re-evaluated for all cases, causing numbers in each category to be recalculated
The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.
The complete health and stranding report, stranding maps and summary are attached.

NRDA
Quad Report Attached
*
ASSETS AND PLATFORMS*
The following digital files are attached. Information is current as of
19 1500 June 10.

1. NOAA Platform Powerpoint showing current mapped locations of assets.
2. OMAO Assets Excel Gantt Chart showing projects assigned to each asset.
3. Proposed OMAO Asset DWH Response Schedule Word document identifying impacts to NOAA projects should OMAO assets be tasked.
4. DWH Ship Tasking Impacts.
5. DWH Aircraft Tasking Impacts.

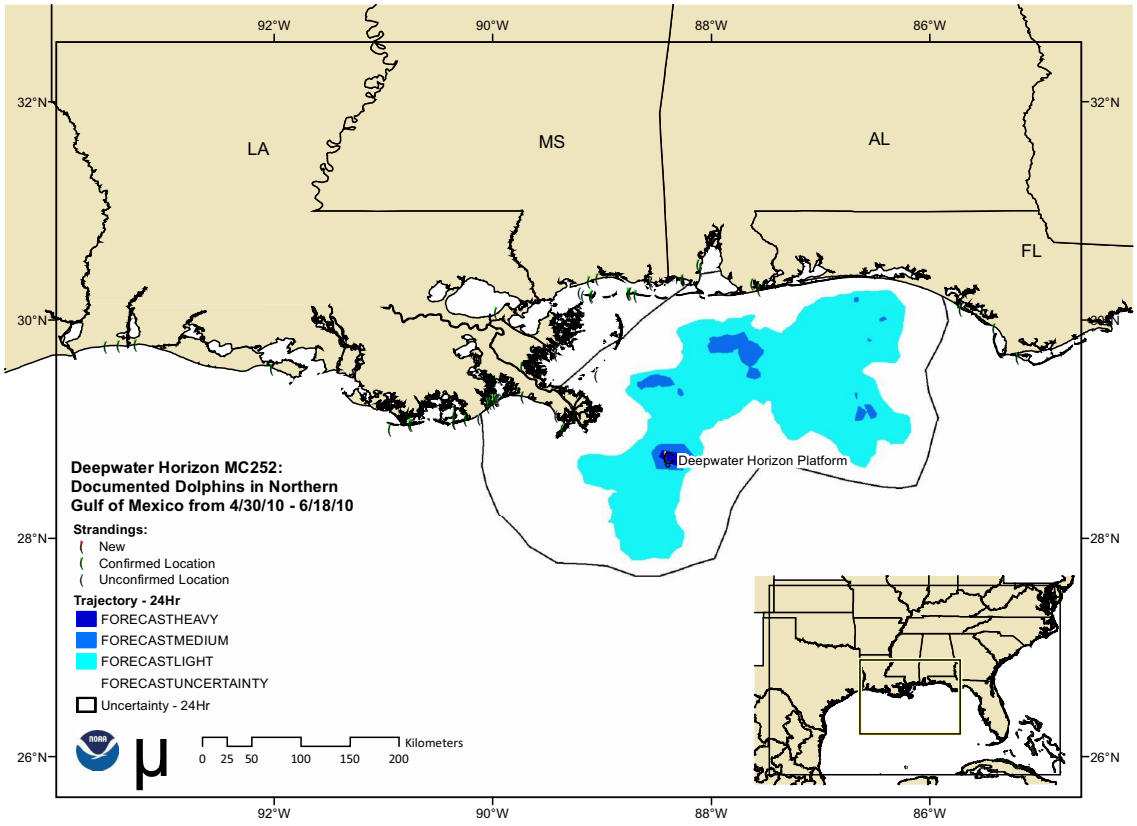
*
REGIONAL*
No Report
*
LEGISLATIVE / INTERGOVT AFFAIRS*
No Report
*
COMMS / PUBLIC AFFAIRS*
No Report

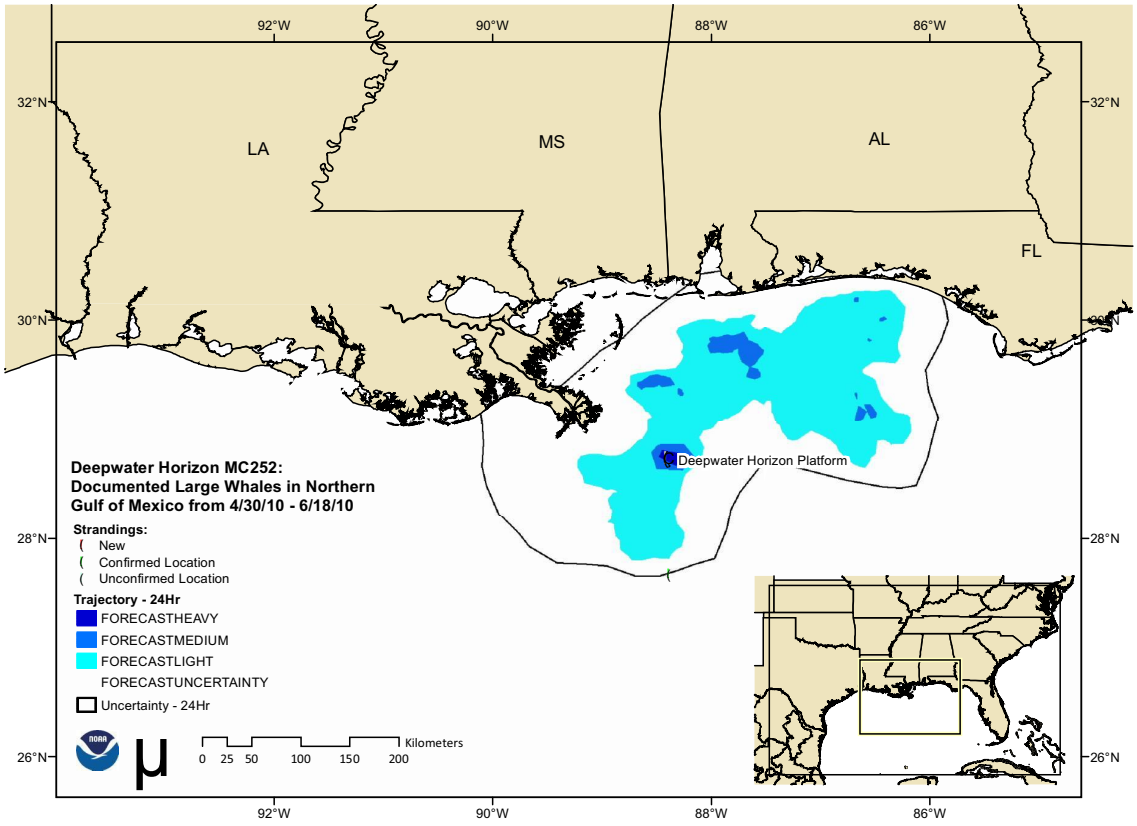
EXTERNAL ENGAGEMENT
No Report

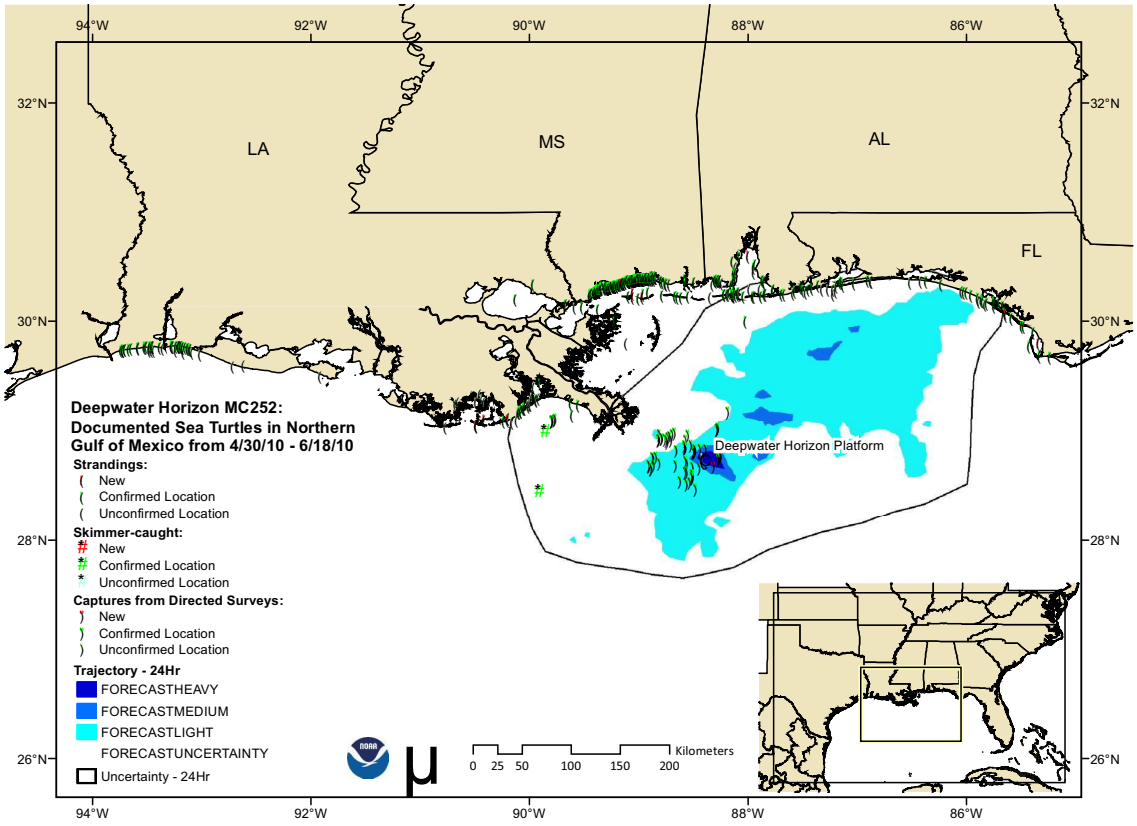
DATA INFORMATION
No Report

INTERNATIONAL AFFAIRS
No Report
*
LEGAL / GC*
No Report

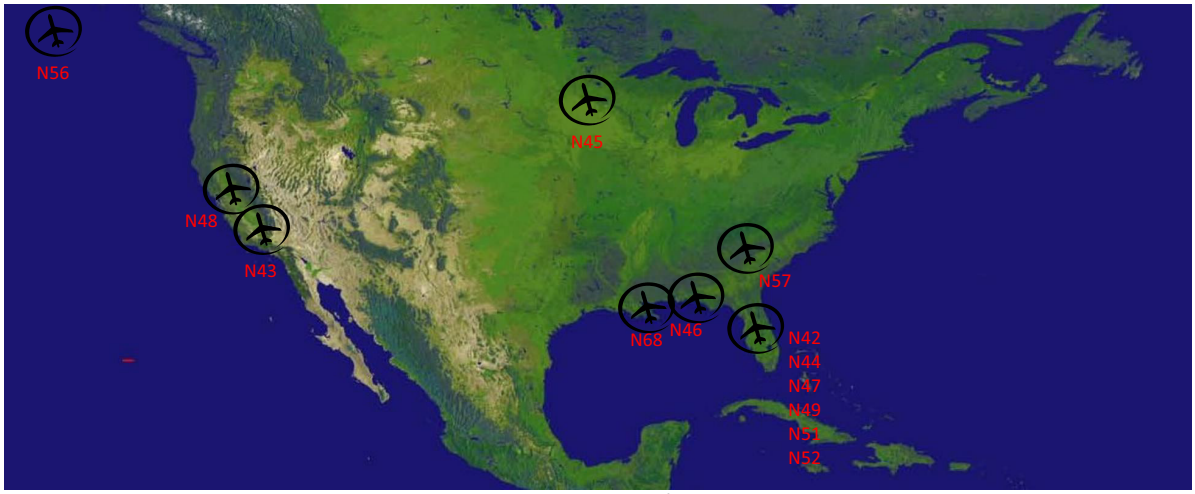
POLICY / BUDGET
No Report


92°W
90°W
88°W
86°W
32°N
30°N
28°N
26°N
LA
MS
AL
FL
Deepwater Horizon Platform
Deepwater Horizon MC252:
Documented Dolphins in Northern
Gulf of Mexico from 4/30/10 - 6/18/10
Strandings:
New
Confirmed Location
Unconfirmed Location
Trajectory - 24Hr
FORECASTHEAVY
FORECASTMEDIUM
FORECASTLIGHT
FORECASTUNCERTAINTY
Uncertainty - 24Hr
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Kilometers


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0 25 50 100 150 200
Kilometers

NOAA Aircraft Positions
As of 19 JUN 2010



ID	Type	Status Today
N42	P-3	No flight, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Flying Cloud, MN. GRAV-D installation.
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Sacramento, CA
N49	G-IV	Tail Doppler Radar testing, MacDill AFB
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Dutch Harbor, AK
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

NOAA NRDA Activities Report
6/19/2010
Information as of 6/18/10

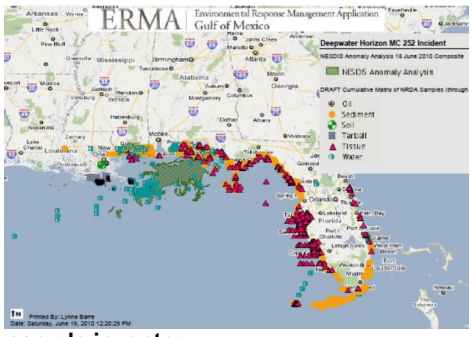
Critical Issues for Discussion/Action

None

Yesterday's Activities Recap

Technical Working Groups	Field Teams or Ship Deployed	Location	Data collected
Shoreline	4 Teams	1) Hospital & Wilkinson Bay, 2) Lake Grande Ecaille, 3) Calumet Island, and 4) Landry Bay, Mud Lake	Data sheets, waypoint tracklogs, and photos. Observations compared with SCAT data,
Water Column	*Brooks McCall*	5 km N of well head	Deep water sampling
	Jack Fitz	2 km ring from well head	Plume sampling
	Thomas Jefferson	Coastal sampling LA	CTD casts
	Endeavor	In transit	Deep water sampling, drifters
Marine Mammals and Sea Turtles	Dolphin photo-id survey	Barataria Bay and Bay des Ileitis	7 sightings with approx. 95 dolphins
	Gordon Gunter	Transects S of FL panhandle	Acoustic surveys

Key Results



Lab sample inventory:
Total: 7,025 samples (60% water, 30%sediement)

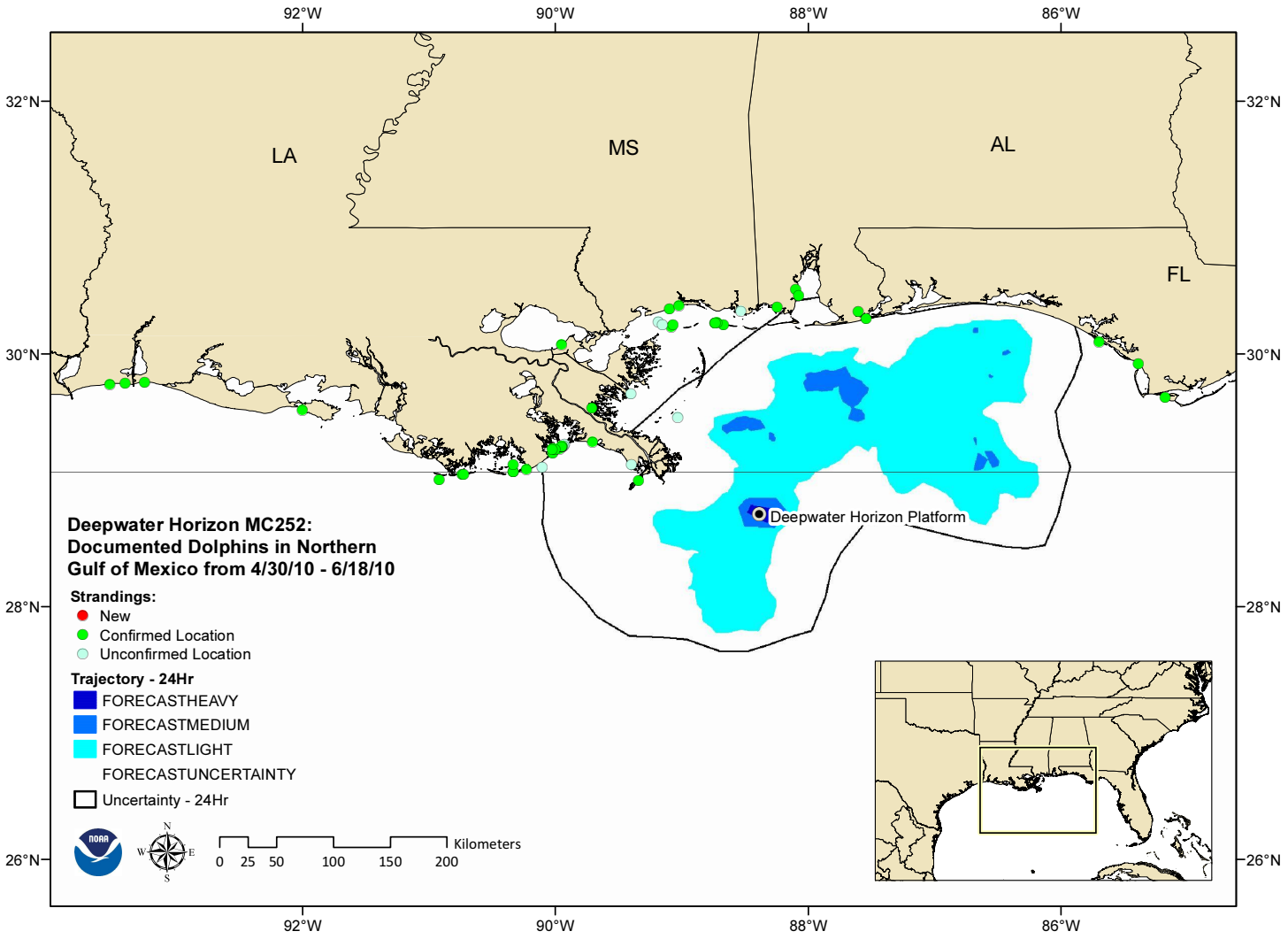
Upcoming Activities

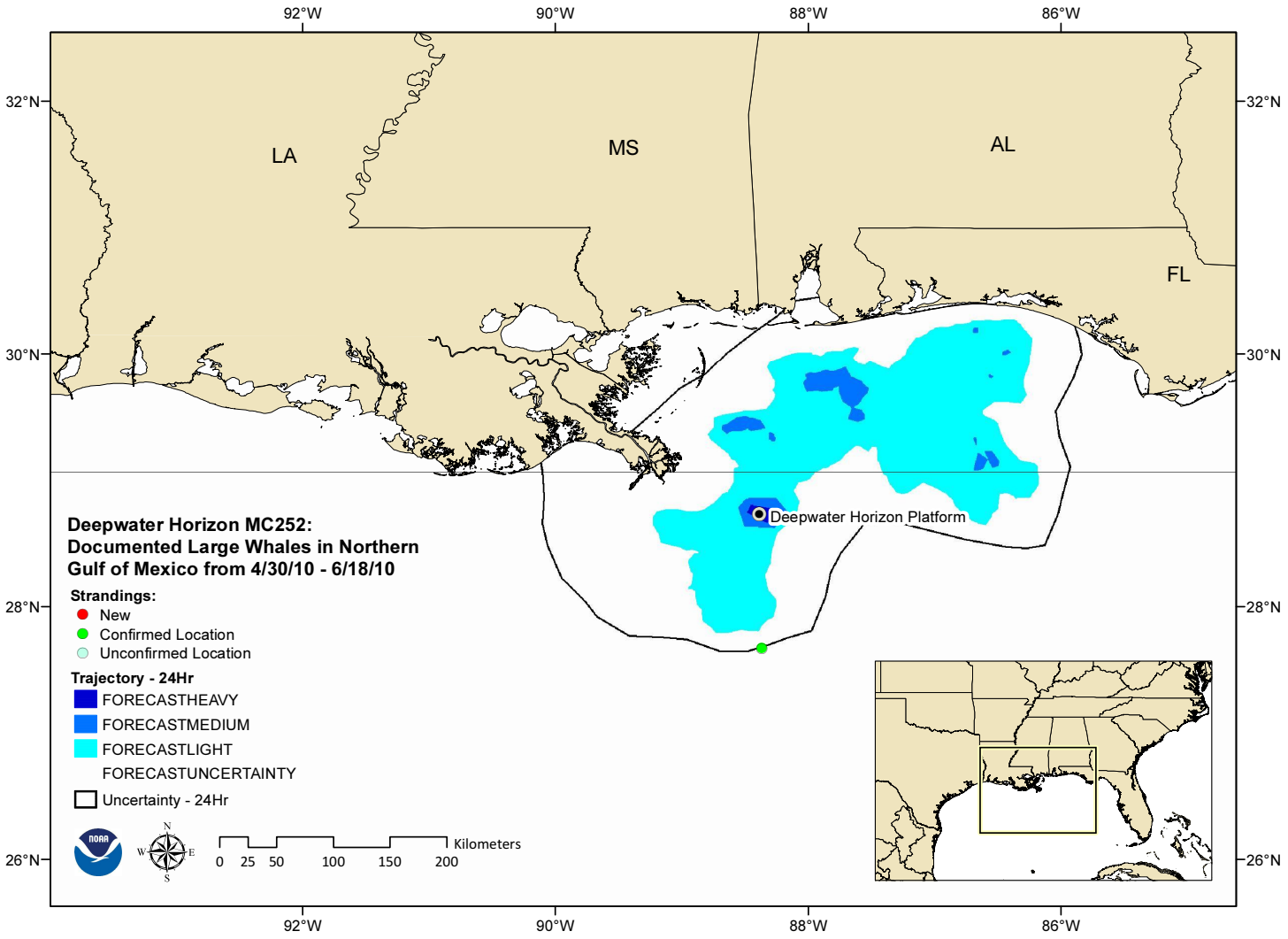
· Technical working groups developing work plans and identifying opportunities for restoration
· Field Teams
  - ·Shoreline teams to Barataria Bay
  - ·SAV field team to St. Andrews Bay, FL 6/22
  - ·Marine Mammal photo-id and biopsy teams
  - ·Marine mammal and sea turtle flights M,W, Sat.
  - ·Fish team testing methods for submerged oil
  - ·Human Use boat ramp and shore fishing counts continuing in LA, MS, AL and FL

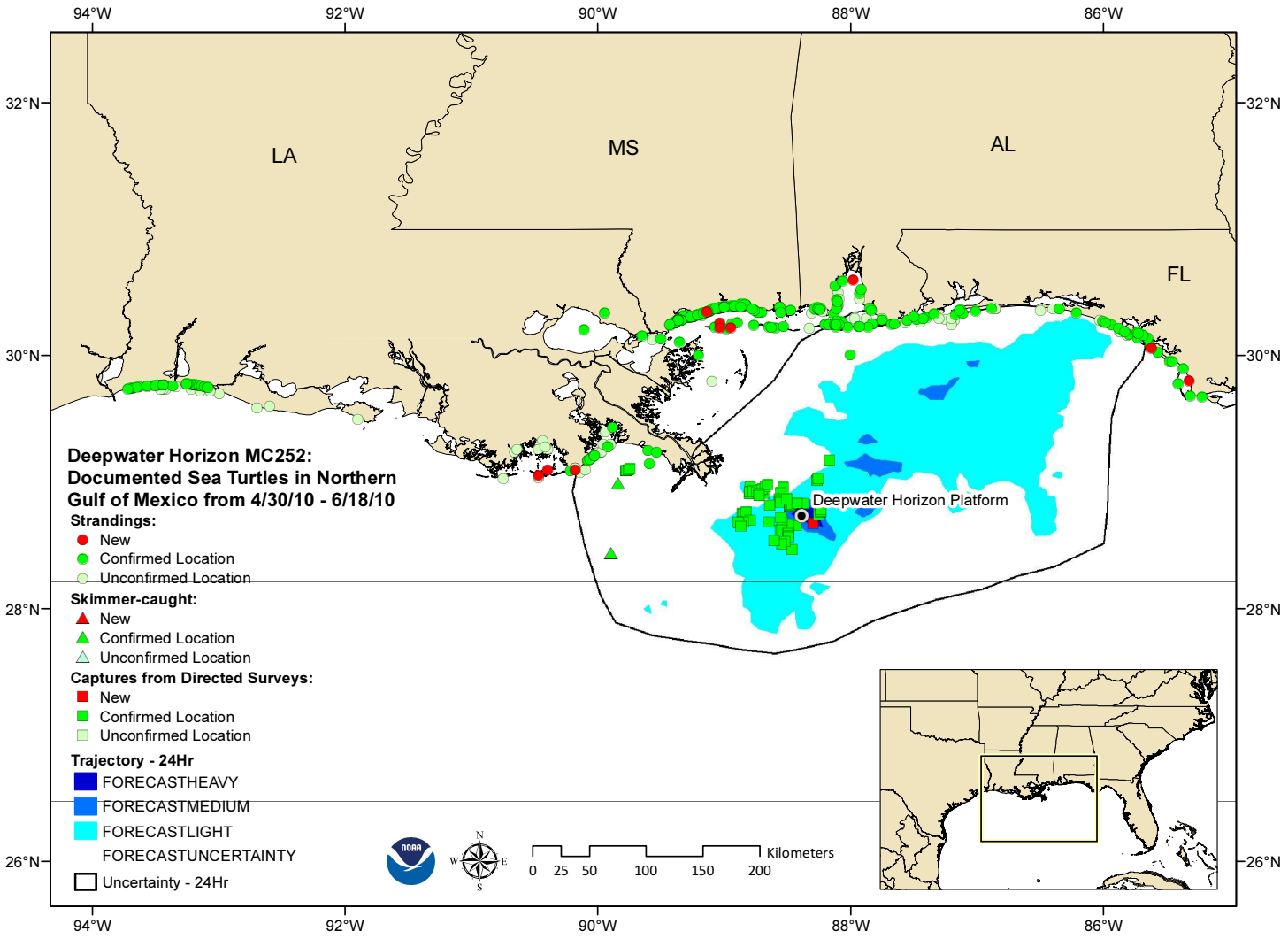
PRIORITY	STATUS UPDATES	LEAD	NOTES
ISSUE TEAMS			
RESPONSE OPERATIONS - NIC/ICC/NRT	No Report	Bill Conner	
SCIENCE	o NOAA scientists have been routinely analyzing water samples taken in and around the well head at depth to monitor for the presence of dispersant compound and in particular the major COREXIT components of propylene glycol (1,2-propanediol) and 2-butoxy ethanol. These "solvents" are up to 30% of the volume of the dispersant mixture. We have not seen in any of the samples analyzed (~150), any of these substances (with Method Detection Limits (MDL) of 0.6 and 0.2 ppm respectively). o A modified form of the NOAA draft data and clearance policy was submitted to the JAG to potentially use it as the clearance policy of that interagency group	Steve Murawski	
LMR	Fisheries Closures There was no change to the closed area for June 19, 2010, The closed area remains 80,806 sq mi (209,286 sq km) and covers about 33% of the GOM EEZ. Seafood Inspection On June 18 there was a conference with Department of Commerce Public Affairs to go over the seafood safety process and methods for tracking samples. There was confusion by the press over a statement regarding samples we had received which turned out to be completely false. Next week we will issue an update on the status of sampling cruises and samples being processed and analyzed. Marine Mammal and Turtle Health and Stranding Increase of 11 turtle strandings (1 dead in FL, 1 dead in AL, 4 dead in MS, 2 dead in LA and 1 live oiled from off of LA; 1 dead from FL & 1 dead in LA from June 17) Increase of 1 dolphin stranding (correction of 1 dead from LA from May 29) Dolphin necropsy status was re-evaluated for all cases, causing numbers in each category to be recalculated The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols. The complete health and stranding report, stranding maps and summary are attached.	John Oliver	
NRDA	Quad Report Attached	Tony Penn	

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FUNCTION TEAMS			
REGIONAL	No Report	Buck Sutter	
LEGISLATIVE / INTERGOVT AFFAIRS	No Report	John Gray	
COMMS / PUBLIC AFFAIRS	No Report	Justin Kenney	
EXTERNAL ENGAGEMENT	No Report	Andy Winer	
DATA INFORMATION	No Report	Joe Klimavicz	
INTERNATIONAL AFFAIRS	No Report	Jim Turner	
LEGAL / GC	No Report	Lois Schiffer	
POLICY / BUDGET	No Report	Sally Yozell	

Document ID: 0.7.19.1893.1


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Kilometers

Defined Categories of Stranded Marine Mammals/Sea Turtles During MC 252 Spill

1) Visibly Oiled
   a. Evidence of external oiling (live or dead animals); or
   b. Evidence of internal oiling on initial exam: Oil in oral cavity, nares or blowhole (live or dead animals); or
   c. Evidence of internal oiling on necropsy: Oil in esophagus, gastrointestinal tract and/or respiratory tract (dead animals).
2) Not Visibly Oiled: Do not meet criteria above. Note not visibly oiled does not imply cause of death nor whether this event impacted the animal.

Procedures for Determining Oiling Status in Marine Mammals or Sea Turtles

1) Upon report of stranded animal, designated members of the Wildlife Branch (trained to appropriate evidence collection and Chain of Custody procedure) will be dispatched to the site for initial evaluation.

2) All animals within the "designated spill area" will be immediately externally evaluated, sampled, and photographed following NOAA's "Marine Mammal Oil Spill Response Guidelines" or the established "Sea Turtle MS 252 Response Guidelines".
   a. All animals within a specified distance that affected mammals or turtles may travel or float after being affected (distance to be determined upon daily consultation with the Envt Unit within the Planning Section and the NRDA Unit) will be immediately externally evaluated and, if suspicious, will be externally sampled.
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3) All stranded animals will be grossly evaluated by necropsy (cetacea at site of stranding, at the primary care facility, or at a pre-determined necropsy site if logistically feasible, sea turtles at the primary care facility or at a designated remote pathology center).
   a. For certain carcasses, such as turtles with open coelomic cavities or dolphins in advanced state of decomposition and no intact GI tract, it may not be possible to pathologically determine cause of death or pathologies and collect useable tissues. The sampling of these animals will be for the presence of external oil only.

4) Oiling status will be determined based on external and internal gross evaluation. NOTE THAT THE DETERMINATION OF OILING STATUS DOES NOT ESTABLISH SUB-APPARENT OIL EXPOSURE OR THE CAUSE OF DEATH. In fact, some gross pathological changes, such as respiratory damage or significant irritation to ocular tissues or mucous membranes, can be associated with oil exposure. The determination of these types of impacts must come from further evaluation of the samples and other evidence, such as histopathological evaluation of tissues and/or PAH analysis of the biological samples.

	TOTAL Dolphins						
	Live			Dead			Date Totals
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	
Subtotal 30 Apr-31 May	0	0	0	1	31	0	32
Subtotal 1 Jun-15 Jun	0	2	0	2	8	2	14
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	1	0	0	0	0	0	1
18-Jun-10	0	0	0	0	0	0	0
Category Totals	1	2	0	3	39	2	47
Species Total	47						

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	TOTAL Whales						
	Live			Dead			Date
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Totals
Subtotal 30 Apr-31 May	0	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	1	1
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0	0
Category Totals	0	0	0	0	0	1	1
Species Total	1						

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	TOTAL Turtles												
	Live Strandings			Dead Strandings			Live Directed Captures			Dead Directed Captures			Date
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Totals
Subtotal 30 Apr-31 May	**2**	**17**	**0**	**1**	**82**	**153**	**10**	**0**	**0**	**0**	**0**	**0**	**265**
Subtotal 1 Jun-15 Jun	**3**	**9**	**2**	**3**	**0**	**111**	**53**	**0**	**0**	**3**	**0**	**0**	**184**
16-Jun-10	1	0	0	1	0	5	6	0	0	0	0	0	**13**
17-Jun-10	0	3	0	0	0	6	0	0	0	0	0	0	**9**
18-Jun-10	0	0	0	0	0	8	1	0	0	0	0	0	**9**
Category Totals	**6**	**29**	**2**	**5**	**82**	**283**	**70**	**0**	**0**	**3**	**0**	**0**	**480**
Species Total	**480**												

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b. Those animals not within or adjacent to the "designated spill area" should *not* be considered as part of this spill and not be accounted for in the spill documentation (but standard stranding procedures should be followed).

3) All stranded animals will be grossly evaluated by necropsy (cetacea at site of stranding, at the primary care facility, or at a pre-determined necropsy site if logistically feasible, sea turtles at the primary care facility or at a designated remote pathology center).

a. For certain carcasses, such as turtles with open coelomic cavities or dolphins in advanced state of decomposition and no intact GI tract, it may not be possible to pathologically determine cause of death or pathologies and collect useable tissues. The sampling of these animals will be for the presence of external oil only.

4) Oiling status will be determined based on external and internal gross evaluation. NOTE THAT THE DETERMINATION OF OILING STATUS DOES NOT ESTABLISH SUB-APPARENT OIL EXPOSURE OR THE CAUSE OF DEATH. In fact, some gross pathological changes, such as respiratory damage or significant irritation to ocular tissues or mucous membranes, can be associated with oil exposure. The determination of these types of impacts must come from further evaluation of the samples and other evidence, such as histopathological evaluation of tissues and/or PAH analysis of the biological samples.

Document ID: 0.7.19.1893.5

Summary Totals

370

Document ID: 0.7.19.1893.5

Dolphin Status	
Total Verified Dolphins	**47**
Total dead stranded dolphins	44
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	2
Total live released dolphins	1
Dolphin Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	25
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	7
Number of full necropsies performed	8
Verified strandings but animals not collected due to stage of decomposition or unable to recover	4
Carcasses to be necropsied, if decomposition stage warrants	2

Whale Status	
Total Verified Whales	**1**
Total dead stranded whales	1
Total live whales currently in rehabilitation	0
Total live whales stranded that died in care	0
Total live released whales	0
Whale Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	0
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	0
Number of full necropsies performed	0
Verified strandings but animals not collected due to stage of decomposition or unable to recover	1
Carcasses to be necropsied, if decomposition stage warrants	0

Turtle Status	
Total Verified Turtles	**480**
Total turtles found dead	373
Total live turtles currently in rehabilitation	96
Total live turtles that died in rehabilitation	7
Total live turtles released	4
Turtle Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	59
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	251

Document ID: 0.7.19.1893.5

	TOTAL Dolphins						
	Live			Dead			Date Totals
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	
Subtotal 30 Apr-31 May	0	0	0	1	31	0	32
Subtotal 1 Jun-15 Jun	0	2	0	2	8	2	14
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	1	0	0	0	0	0	1
18-Jun-10	0	0	0	0	0	0	0
TOTALS	1	2	0	3	39	2	47
Species Total	47						

	Dolphins - FLORIDA					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	2	0	0	1	0
16-Jun-10	0	0	0	0	0	0
17-Jun-10	1	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	1	2	0	0	1	0
Species Total	4					

	Dolphins - MISSISSIPPI					
	Live			Dead		
	Oiled	Unoiled	Pendin	Oiled	Unoile	Pendin
Subtotal 30 Apr-31 May	0	0	0	0	8	0
Subtotal 1 Jun-15 Jun	0	0	0	1	1	1
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	1	9	1
Species Total	11					

	Dolphins - ALABAMA					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	0	0	0	0	3	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	1
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	0	3	1
Species Total	4					

	Dolphins - LOUISIANA					
	Live			Dead		
	Oiled	Unoiled	Pendin	Oiled	Unoile	Pendin
Subtotal 30 Apr-31 May	0	0	0	1	20	0
Subtotal 1 Jun-15 Jun	0	0	0	1	6	0
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	2	26	0
Species Total	28					

Document ID: 0.7.19.1893.5

	TOTAL Whales						
	Live			Dead			Date Totals
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	
Subtotal 30 Apr-31 May	0	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	1	1
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0	0
Category Totals	0	0	0	0	0	1	1
Species Group Total	1						

	Whales - FLORIDA					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	0
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0
Species Total	0					

	Whales - MISSISSIPPI					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0					

	Whales - ALABAMA					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	0
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0
Species Total	0					

	Whales - LOUISIANA					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	0					

	Whales - Off-Shore					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	1
16-Jun-10	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0
TOTALS	0	0	0	0	0	1
Species Total	1					

Document ID: 0.7.19.1893.5

	TOTAL Turtles												
	Live Strandings			Dead Strandings			Live Directed Captures			Dead Directed Captures			Date Totals
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	
Subtotal 30 Apr-31 May	**2**	**17**	**0**	**1**	**82**	**153**	**10**	**0**	**0**	**0**	**0**	**0**	**265**
Subtotal 1 Jun-15 Jun	**3**	**9**	**2**	**3**	**0**	**111**	**53**	**0**	**0**	**3**	**0**	**0**	**184**
16-Jun-10	1	0	0	1	0	5	6	0	0	0	0	0	**13**
17-Jun-10	0	3	0	0	0	6							**9**
18-Jun-10	0	0	0	0	0	8	1	0	0	0	0	0	**9**
Category Totals	**6**	**29**	**2**	**5**	**82**	**283**	**70**	**0**	**0**	**3**	**0**	**0**	**480**
Species Total	**480**												

	Turtles - FLORIDA						Turtles - MISSISSIPPI					
	Live			Dead			Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pendin
Subtotal 30 Apr-31 May	0	4	0	0	0	27	0	9	0	0	75	22
Subtotal 1 Jun-15 Jun	1	3	1	0	0	10	0	4	1	0	0	77
16-Jun-10	1	0	0	0	0	0	0	0	0	0	0	5
17-Jun-10	0	0	0	0	0	1	0	3	0	0	0	3
18-Jun-10	0	0	0	0	0	1	0	0	0	0	0	4
TOTALS	2	7	1	0	0	39	0	16	1	0	75	111
Species Total	49						203					

	Turtles - ALABAMA						Turtles - LOUISIANA					
	Live			Dead			Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pendin
Subtotal 30 Apr-31 May	0	2	0	0	5	43	2	2	0	1	2	61
Subtotal 1 Jun-15 Jun	2	0	0	0	0	9	0	2	0	3	0	15
16-Jun-10	0	0	0	1	0	0	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0	0	0	0	0	0	2
18-Jun-10	0	0	0	0	0	1	0	0	0	0	0	2
TOTALS	2	2	0	1	5	53	2	4	0	4	2	80
Species Total	63						92					

	Turtles - Dedicated On-Water Turtle Surveys					
	Live			Dead		
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending
Subtotal 30 Apr-31 May	10	0	0	0	0	0
Subtotal 1 Jun-15 Jun	53	0	0	3	0	0
16-Jun-10	6	0	0	0	0	0
17-Jun-10						
18-Jun-10	1	0	0	0	0	0
TOTALS	70	0	0	3	0	0
Species Total	73					

Document ID: 0.7.19.1893.5

	TOTAL Dolphins						
	Live			Dead			Date
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Totals
Subtotal 30 Apr-31 May	0	0	0	1	31	0	32
Subtotal 1 Jun-15 Jun	0	2	0	2	8	2	14
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	1	0	0	0	0	0	1
18-Jun-10	0	0	0	0	0	0	0
Category Totals	1	2	0	3	39	2	47
Species Total	47						

Defined Categories of Stranded Marine Mammals/Sea Turtles During MC 252 Spill

1) Visibly Oiled
   a. Evidence of external oiling (live or dead animals); or
   b. Evidence of internal oiling on initial exam: Oil in oral cavity, nares or blowhole (live or dead animals); or
   c. Evidence of internal oiling on necropsy: Oil in esophagus, gastrointestinal tract and/or respiratory tract (dead animals).
2) Not Visibly Oiled: Do not meet criteria above. Note not visibly oiled does not imply cause of death nor whether this event impacted the animal.

Procedures for Determining Oiling Status in Marine Mammals or Sea Turtles

1) Upon report of stranded animal, designated members of the Wildlife Branch (trained to appropriate evidence collection and Chain of Custody procedure) will be dispatched to the site for
2) All animals within the "designated spill area" will be immediately externally evaluated, sampled, and photographed following NOAA's "Marine Mammal Oil Spill Response Guidelines" or the established "Sea Turtle MS 252 Response Guidelines".
   a. All animals within a specified distance that affected mammals or turtles may travel or float after being affected (distance to be determined upon daily consultation with the Envt Unit within the Planning Section and the NRDA Unit) will be immediately externally evaluated and, if suspicious, will be externally sampled.
   b. Those animals not within or adjacent to the "designated spill area" should *not* be considered as part of this spill and not be accounted for in the spill documentation (but standard stranding procedures should be followed).
3) All stranded animals will be grossly evaluated by necropsy (cetacea at site of stranding, at the primary care facility, or at a pre-determined necropsy site if logistically feasible, sea turtles at the primary care facility or at a designated remote pathology center).
   a. For certain carcasses, such as turtles with open coelomic cavities or dolphins in advanced state of decomposition and no intact GI tract, it may not be possible to pathologically determine cause of death or pathologies and collect useable tissues. The sampling of these animals will be for the presence of external oil only.
4) Oiling status will be determined based on external and internal gross evaluation. NOTE THAT THE DETERMINATION OF OILING STATUS DOES NOT ESTABLISH SUB-APPARENT OIL EXPOSURE OR THE CAUSE OF DEATH. In fact, some gross pathological changes, such as respiratory damage or significant irritation to ocular tissues or mucous membranes, can be associated with oil exposure. The determination of these types of impacts must come from further evaluation of the samples and other evidence, such as histopathological evaluation of tissues and/or PAH analysis of the biological

Document ID: 0.7.19.1893.6

	TOTAL Whales						
	Live			Dead			Date
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Totals
Subtotal 30 Apr-31 May	0	0	0	0	0	0	0
Subtotal 1 Jun-15 Jun	0	0	0	0	0	1	1
16-Jun-10	0	0	0	0	0	0	0
17-Jun-10	0	0	0	0	0	0	0
18-Jun-10	0	0	0	0	0	0	0
Category Totals	0	0	0	0	0	1	1
Species Total	1						

Defined Categories of Stranded Marine Mammals/Sea Turtles During MC 252 Spill

1) Visibly Oiled
   a. Evidence of external oiling (live or dead animals); or
   b. Evidence of internal oiling on initial exam: Oil in oral cavity, nares or blowhole (live or dead animals); or
   c. Evidence of internal oiling on necropsy: Oil in esophagus, gastrointestinal tract and/or respiratory tract (dead animals).
2) Not Visibly Oiled: Do not meet criteria above. Note not visibly oiled does not imply cause of death nor whether this event impacted the animal.

Procedures for Determining Oiling Status in Marine Mammals or Sea Turtles

1) Upon report of stranded animal, designated members of the Wildlife Branch (trained to appropriate evidence collection and Chain of Custody procedure) will be dispatched to the site for
2) All animals within the "designated spill area" will be immediately externally evaluated, sampled, and photographed following NOAA's "Marine Mammal Oil Spill Response Guidelines" or the established "Sea Turtle MS 252 Response Guidelines".
   a. All animals within a specified distance that affected mammals or turtles may travel or float after being affected (distance to be determined upon daily consultation with the Envt Unit within the Planning Section and the NRDA Unit) will be immediately externally evaluated and, if suspicious, will be externally sampled.
   b. Those animals not within or adjacent to the "designated spill area" should *not* be considered as part of this spill and not be accounted for in the spill documentation (but standard stranding procedures should be followed).
3) All stranded animals will be grossly evaluated by necropsy (cetacea at site of stranding, at the primary care facility, or at a pre-determined necropsy site if logistically feasible, sea turtles at the primary care facility or at a designated remote pathology center).
   a. For certain carcasses, such as turtles with open coelomic cavities or dolphins in advanced state of decomposition and no intact GI tract, it may not be possible to pathologically determine cause of death or pathologies and collect useable tissues. The sampling of these animals will be for the presence of external oil only.
4) Oiling status will be determined based on external and internal gross evaluation. NOTE THAT THE DETERMINATION OF OILING STATUS DOES NOT ESTABLISH SUB-APPARENT OIL EXPOSURE OR THE CAUSE OF DEATH. In fact, some gross pathological changes, such as respiratory damage or significant irritation to ocular tissues or mucous membranes, can be associated with oil exposure. The determination of these types of impacts must come from further evaluation of the samples and other evidence, such as histopathological evaluation of tissues and/or PAH analysis of the biological

Document ID: 0.7.19.1893.6

	TOTAL Turtles												
	Live Strandings			Dead Strandings			Live Directed Captures			Dead Directed Captures			Date
	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Oiled	Unoiled	Pending	Totals
Subtotal 30 Apr-31 May	2	17	0	1	82	153	10	0	0	0	0	0	265
Subtotal 1 Jun-15 Jun	3	9	2	3	0	111	53	0	0	3	0	0	184
16-Jun-10	1	0	0	1	0	5	6	0	0	0	0	0	13
17-Jun-10	0	3	0	0	0	6	0	0	0	0	0	0	9
18-Jun-10	0	0	0	0	0	8	1	0	0	0	0	0	9
Category Totals	6	29	2	5	82	283	70	0	0	3	0	0	480
Species Total	480												

Defined Categories of Stranded Marine Mammals/Sea Turtles During MC 252 Spill

1) Visibly Oiled

a. Evidence of external oiling (live or dead animals); or

b. Evidence of internal oiling on initial exam: Oil in oral cavity, nares or blowhole (live or dead animals); or

c. Evidence of internal oiling on necropsy: Oil in esophagus, gastrointestinal tract and/or respiratory tract (dead animals).

2) Not Visibly Oiled: Do not meet criteria above. Note not visibly oiled does not imply cause of death nor whether this event impacted the animal.

Procedures for Determining Oiling Status in Marine Mammals or Sea Turtles

1) Upon report of stranded animal, designated members of the Wildlife Branch (trained to appropriate evidence collection and Chain of Custody procedure) will be dispatched to the site for initial evaluation.

2) All animals within the "designated spill area" will be immediately externally evaluated, sampled, and photographed following NOAA's "Marine Mammal Oil Spill Response Guidelines" or the established "Sea Turtle MS 252 Response Guidelines".

a. All animals within a specified distance that affected mammals or turtles may travel or float after being affected (distance to be determined upon daily consultation with the Envt Unit within the Planning Section and the NRDA Unit) will be immediately externally evaluated and, if suspicious, will be externally sampled.

b. Those animals not within or adjacent to the "designated spill area" should *not* be considered as part of this spill and not be accounted for in the spill documentation (but standard stranding procedures should be followed).

3) All stranded animals will be grossly evaluated by necropsy (cetacea at site of stranding, at the primary care facility, or at a pre-determined necropsy site if logistically feasible, sea turtles at the primary care facility or at a designated remote pathology center).

a. For certain carcasses, such as turtles with open coelomic cavities or dolphins in advanced state of decomposition and no intact GI tract, it may not be possible to pathologically determine cause of death or pathologies and collect useable tissues. The sampling of these animals will be for the presence of external oil only.

4) Oiling status will be determined based on external and internal gross evaluation. NOTE THAT THE DETERMINATION OF OILING STATUS DOES NOT ESTABLISH SUB-APPARENT OIL EXPOSURE OR THE CAUSE OF DEATH. In fact, some gross pathological changes, such as respiratory damage or significant irritation to ocular tissues or mucous membranes, can be associated with oil exposure. The determination of these types of impacts must come from further evaluation of the samples and other evidence, such as histopathological evaluation of tissues and/or PAH analysis of the biological samples.

Document ID: 0.7.19.1893.6

Summary Totals

370

Document ID: 0.7.19.1893.6

Dolphin Status	
Total Verified Dolphins	**47**
Total dead stranded dolphins	44
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	2
Total live released dolphins	1
Dolphin Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	25
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	7
Number of full necropsies performed	8
Verified strandings but animals not collected due to stage of decomposition or unable to recover	4
Carcasses to be necropsied, if decomposition stage warrants	2

Whale Status	
Total Verified Whales	**1**
Total dead stranded whales	1
Total live whales currently in rehabilitation	0
Total live whales stranded that died in care	0
Total live released whales	0
Whale Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	0
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	0
Number of full necropsies performed	0
Verified strandings but animals not collected due to stage of decomposition or unable to recover	1
Carcasses to be necropsied, if decomposition stage warrants	0

Turtle Status	
Total Verified Turtles	**480**
Total turtles found dead	373
Total live turtles currently in rehabilitation	96
Total live turtles that died in rehabilitation	7
Total live turtles released	4
Turtle Necropsy Status	
Number collected and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	59
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	251

Document ID: 0.7.19.1893.6

Update through June 18, 2010 (as of 1800)

Marine Mammal and Sea Turtle Health and Response

Noteworthy Developments During this Reporting Period

- Increase of 11 turtle strandings (1 dead in FL, 1 dead in AL, 4 dead in MS, 2 dead in LA and 1 live oiled from off of LA; 1 dead from FL & 1 dead in LA from June 17)
- Increase of 1 dolphin stranding (correction of 1 dead from LA from May 29)
- Dolphin necropsy status was re-evaluated for all cases, causing numbers in each category to be recalculated
- The current designated spill area encompasses the coastline from the Texas/Louisiana border to Apalachicola (Franklin County), Florida. All stranded animals within this geographic range are being examined following the oil spill response protocols.

Sea Turtles

Total Turtle Numbers
480 total sea turtles verified to date within the "designated spill area" (increase of 11 from June 17 report)

- 407 stranded* (increase of 10 from June 17)
    - 370 of the stranded were found dead (increase of 10 from June 17)
    - 37 of the stranded were found alive (no change from June 17)
        - 4 recovered alive but died in rehab (no change from June 17)
        - 4 turtles released alive (no change from June 17)
        - 29 live turtles in rehabilitation (no change from June 17)
- 73 turtles collected during directed turtle sampling efforts (increase of 1 from June 17)
    - 67 live turtles in rehabilitation (increase of 1 from June 17)
    - 3 turtles collected dead (no change from June 17)
    - 3 turtles died in rehabilitation (no change from June 17)

* For this event, a true turtle stranding is defined as a turtle that washes ashore dead or debilitated or is found floating dead or debilitated in the course of non-directed turtle surveys. Turtles observed and/or captured during directed sampling efforts are not categorized as strandings.

Turtle Necropsy Status (of the 370 dead stranded, 3 dead directed capture, and 7 that died in rehab):

- 7 assessed and unable to perform necropsies (i.e. advance decomposition) (no change from June 17)
- 17 partial necropsies (e.g. due to scavenging or autolysis) (no change from June 17)
- 59 full necropsies performed (no change from June 17)
- 46 carcasses not collected due to decomposition state or unable to recover but marked and/or buried (no change from June 17)
- 251 carcasses to be necropsied, if decomposition stage warrants (increase of 10 from June 17)

Document ID: 0.7.19.1893.7

- Of the initial 75 full or partial necropsies completed, the two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.

Information on Signs of Sea Turtle Oiling:

- To date, visible evidence of oil has been documented externally on 5 dead stranded sea turtle and 6 live stranded turtles (2 of which were caught in skimming operations).
- To date, visible evidence of oil has been documented externally on 70 live sea turtles and 3 dead sea turtle captured during directed turtle surveys.

Historical Sea Turtle Strandings:

- The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1-18 is 152.
- This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. The breakdown by state for the range of animals historically stranding in the month of June (2005-2009) is as follows:
    - Louisiana: 0-3 stranded sea turtles
    - Mississippi: 0-1 stranded sea turtles
    - Alabama: 0-4 stranded sea turtles
    - Florida panhandle (Escambia – Wakulla Co.): 5-17 stranded sea turtles
- There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.

Marine Mammals

Total Mammal Numbers

47 dolphins have been verified to date within the "designated spill area" (increase of 1 from June 17).

- 44 were dead stranded* dolphins (increase of 1 from June 17)
- 3 were live stranded dolphins, one of which died shortly after stranding, one that was euthanized upon stranding and one that stranded live in boom and was freed immediately (no change from June 17)

1 dead stranded sperm whale has been verified to date within the "designated spill area" (no change from June 17)

* Under the Marine Mammal Protection Act Section 409.3, a marine mammal stranding is defined as an event in the wild where:

- A marine mammal is dead and is on the beach or shore of the United States or in waters under the jurisdiction of the United States (including any navigable waters); OR
- A marine mammal is alive and is on a beach or shore of the United States and unable to return to the water, on a beach or shore of the United States and, although able to return to the water, is an apparent need of medical attention or in the waters under the jurisdiction of the United States (including any navigable waters), but is unable to return to its natural habitat under its own power or without assistance.

Document ID: 0.7.19.1893.7

Update through June 18, 2010 (as of 1800)

Dolphin Necropsy Status (of the 44 dead stranded and 2 live stranded dolphins that died or were euthanized):

- 25 assessed and unable to perform necropsies (e.g. advanced decomposition) (increase of 10 from June 17)
- 7 partial necropsies performed (e.g. due to scavenging or autolysis) (decrease of 3 from June 17)
- 8 full necropsies performed (increase of 1 from June 17)
- 4 verified strandings but animals not collected due to stage of decomposition or unable to recover (decrease of 7 from June 17)
- 2 carcasses to be necropsied, if decomposition stage warrants (no change from June 17)
- Necropsy results are pending for all animals necropsied to date.

Whale Necropsy Status (of the 1 dead stranded):

- 0 assessed and unable to perform necropsies (e.g. advanced decomposition) (no change from June 17)
- 0 partial necropsies performed (e.g. due to scavenging or autolysis) (no change from June 17)
- 0 full necropsies performed (no change from June 17)
- 1 verified stranding but animal not collected due to stage of decomposition or unable to recover (no change from June 17)
- 0 carcasses to be necropsied, if decomposition stage warrants (no change from June 17)

Information on Signs of Mammal Oiling:

- Dolphins: Three of the verified dolphins had evidence of external oil on the tongue and/or body and therefore were classified as oiled. However, we are unable at this time to determine whether the two dead animals were externally oiled pre- or post-mortem. All other necropsy findings are pending.
- Whales: The verified whale had no evidence of external oil.

Historical Dolphin Strandings

- The total number of dolphin strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 18 is 15.
- This is higher than the number of marine mammal strandings that have been documented in recent years in Louisiana, Mississippi, Alabama, and the Florida Panhandle during this approximate time frame. In part, this may be a reflection of increased detection and reporting and the lingering effects of an earlier observed spike in strandings for the winter of 2010.
- The breakdown by state for the range of animals historically stranding in the month of June (2003-2007) is as follows:
    - Louisiana: 0-5 stranded dolphins
    - Mississippi: 0-1 stranded dolphins
    - Alabama : 0-1 stranded dolphins
    - Florida panhandle: 0-4 stranded dolphins

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Historical Whale Strandings

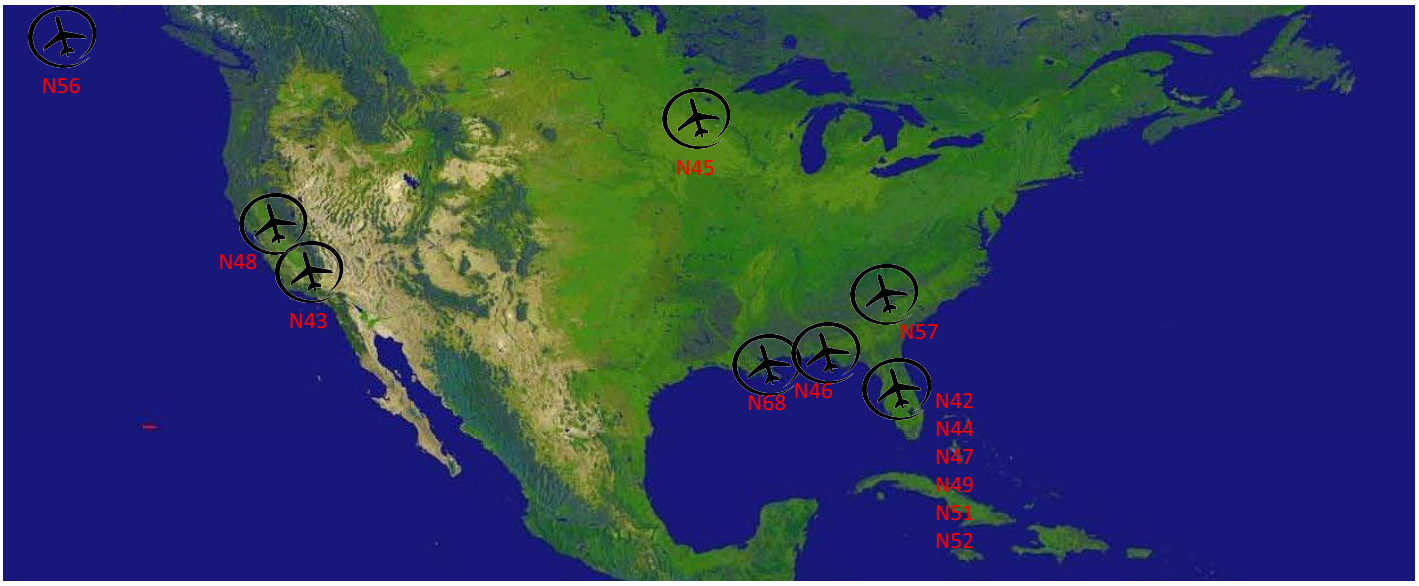
- The total number of whale strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from June 1 - June 18 is 1.
- There are no records of stranded whales in the Gulf of Mexico for the month of June (2003-2007).

Summary of Action Plan Items:

- A marine mammal carcass retrieval and disposal plan and a sampling and disposal plan for dead marine mammals observed by NOAA vessels are being finalized.

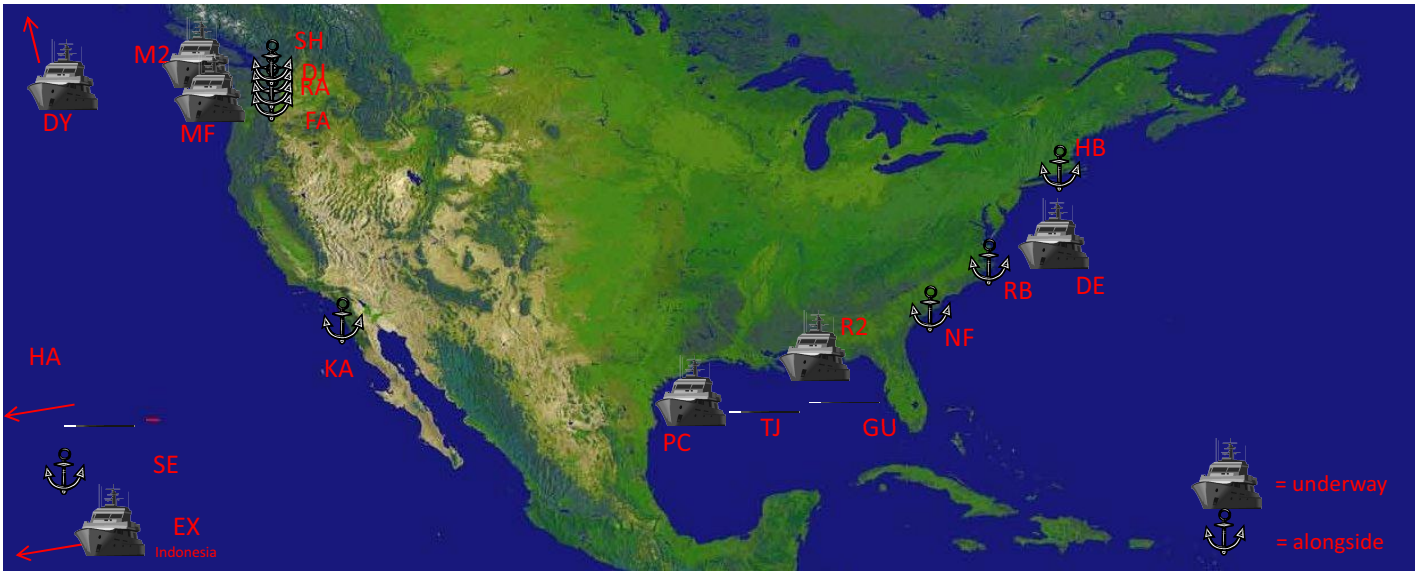
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NOAA Aircraft Positions
As of 19 JUN 2010



ID	Type	Status Today
N42	P-3	No flight, MacDill AFB
N43	P-3	CALNEX, Ontario, CA
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	Flying Cloud, MN. GRAV-D installation.
N46	Twin Otter	DWH multi-spectral scanning/oil density & thickness, Mobile, AL
N47	Shrike	Maintenance, MacDill AFB
N48	Twin Otter	CALNEX, Sacramento, CA
N49	G-IV	Tail Doppler Radar testing, MacDill AFB
N51	Shrike	No flight, MacDill AFB
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Dutch Harbor, AK
N57	Twin Otter	Carrollton, GA for corrosion inspection and maintenance
N68	King Air	DWH coastal photography / mapping, New Orleans, LA

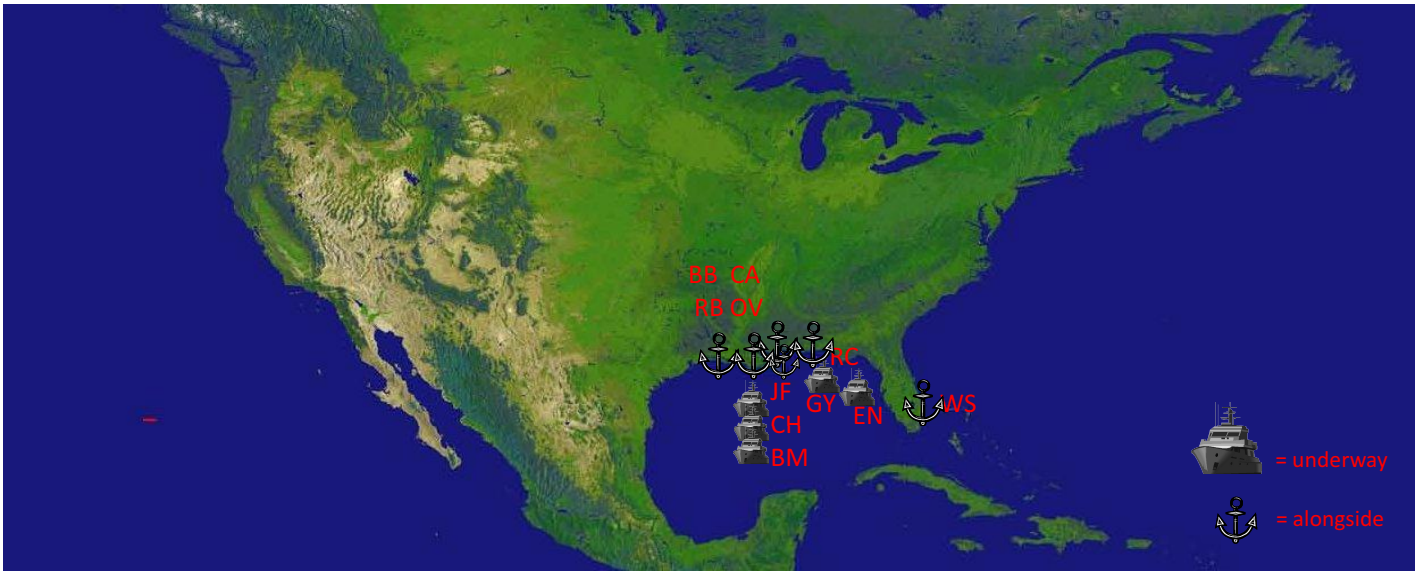
NOAA Ship Positions
As of 19 JUN 2010



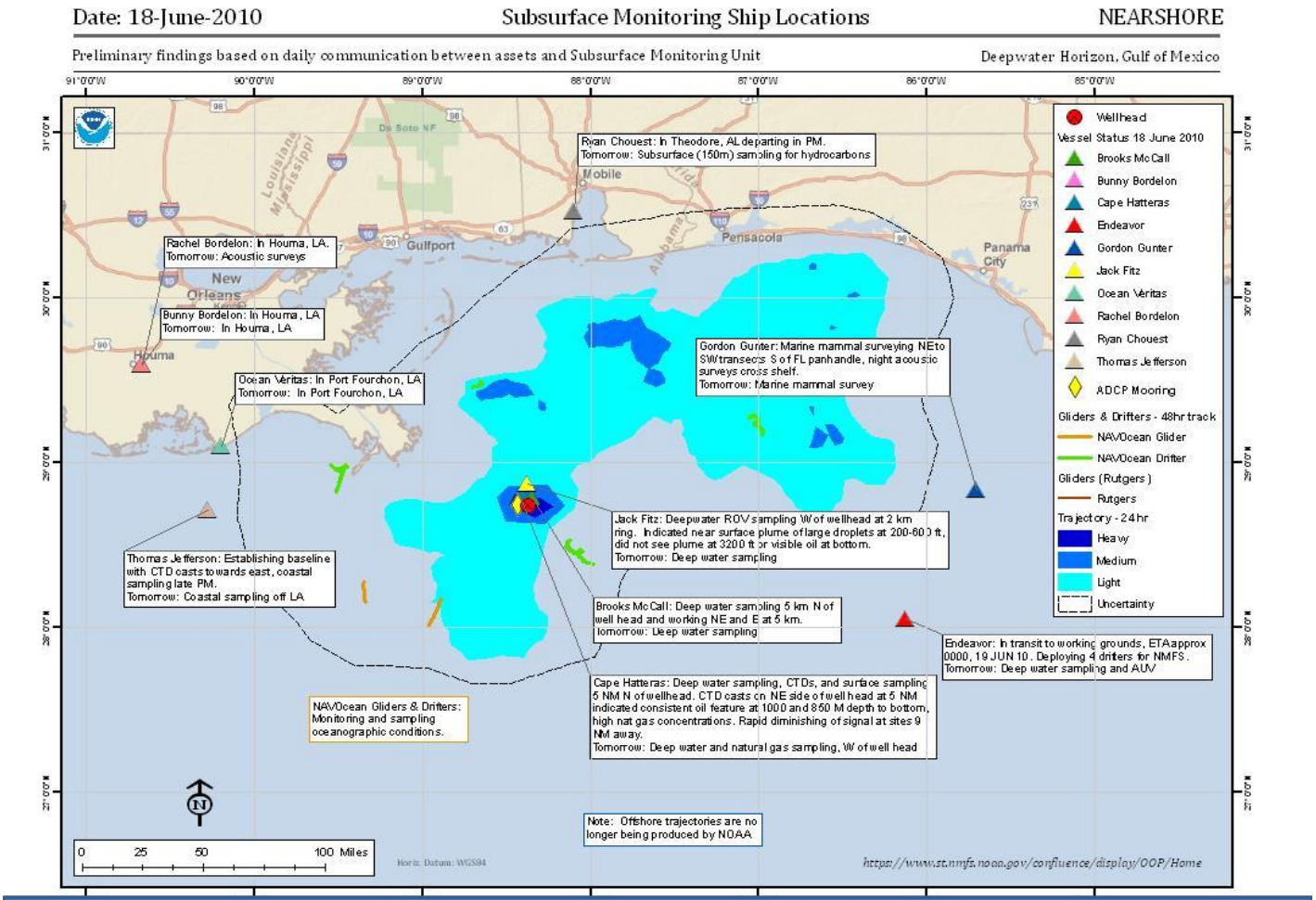
ID	Status Today
FA	Alongside Port Angeles, WA. Departure 06/21 for scheduled project
SH	Alongside Seattle, WA. Departure 6/25 for scheduled project
MF	Underway on scheduled project. Arrival 6/21 Seattle, WA
DY	Underway on scheduled project. Arrival 6/24 Dutch Harbor, AK
HA	Underway on scheduled project. Arrival 06/26 Pearl Harbor, HI
M2	Underway on scheduled project. Arrival 07/04 San Francisco
SE	Alongside Pearl Harbor, HI. Departure 7/6 for scheduled project
KA	Alongside San Diego, CA. Departure 7/8 for scheduled project
RA	Alongside Cascade, OR for major repair period
DJ	Alongside Seattle, WA. Decommissioning scheduled week of 08/02
EX	Arrive today, Bitung, Indonesia (International Date Line
DE	Underway en route GOMEX for DWH ops (seafood study). Arrival Key West, FL 06/24 for staging. Departure 06/25

ID	Status Today
TJ	Underway for continued DWH ops (acoustics and water sampling). Replenish supplies 06/21, Pascagoula. ETA Key West, FL 7/2
HB	Alongside Newport, RI. ETD 7/6 for scheduled project
NF	Alongside Charleston, SC. Departure delayed to ~6/25 following repairs. Expecting tasking for DWH ops.
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Underway for DWH ops (marine mammal survey). ETA Mobile, AL 6/21 for repairs (~ 2 days in drydock) then resume ops. ETA Pascagoula, MS 6/26
PC	Departed 6/14 for scheduled project in GOMEX, no DWH tasking yet. ETA Pascagoula, MS 7/2
R2	ETD for sea trials 06/20. ETD Pascagoula, MS 6/22 for DWH shrimp trawl/ichthyoplankton survey (approx 4-5 days), then resume scheduled work. ETA Galveston 06/30.

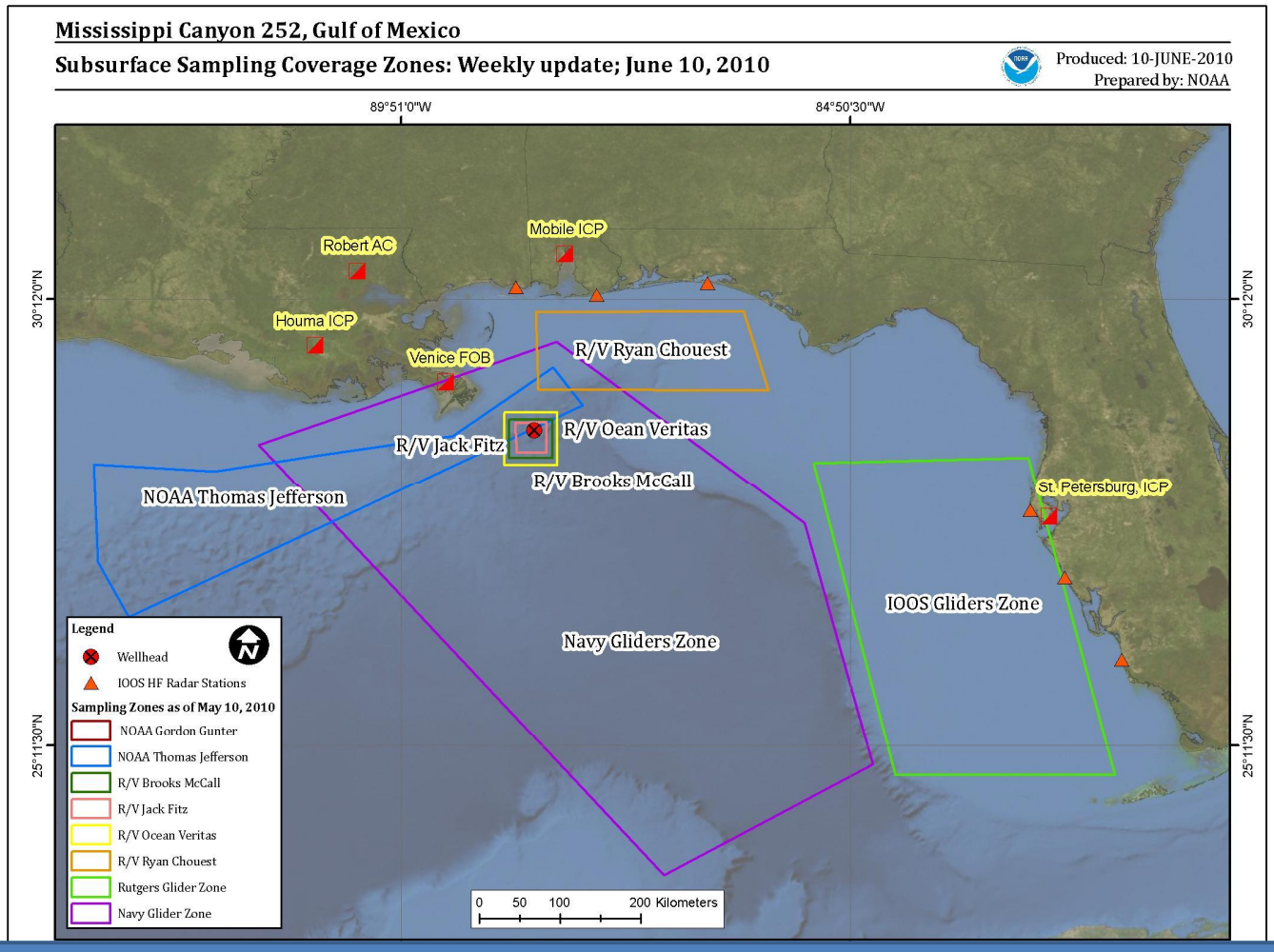
Chartered Vessels and NOAA Small Boats
As of 18 JUN 2010



ID	Type	Status Today
BM	R/V Brooks McCall	Deep water sampling 5km N of wellhead and working NE and E at 5km.
BB	M/V Bunny Bordelon	In Houma, LA
CH	R/V Cape Hatteras	Deepwater sampling, CTD's, and surface sampling 5nm N of wellhead.
CA	R/V Caretta	NOAA Small Boat alongside Pascagoula. DWH begin 21 June
EN	R/V Endeavor	In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying four drifters for NMFS.
GY	R/V Gandy	Reef fish surveys out of Panama City, FL.
JF	R/V Jack Fitz	Deepwater ROV sampling W of wellhead at 2km ring.
OV	R/V Ocean Veritas	In Port Fourchon, LA
RB	M/V Rachel Bordelon	In Houma, LA
RC	R/V Ryan Chouest	In Theodore, AL, departing in PM.
WS	R/V Walton Smith	In Miami, FL



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Assets

Subsurface Monitoring Vessel Assignments

Vessel Assignments for June 18, 2010 to June 20, 2010

Vessel - MMSI	*Type*	*Compliment*	*June 18, 2010*	*June 19, 2010*	*June 20, 2010*
Brooks McCall 338257000	162 ft M/V	32	Deep water sampling 5 km N of well head and working NE and E at 5 km	Deep water sampling	Deep water sampling
Bunny Bordelon 366816890	150 ft OSV	16	In Houma	In Houma	In Houma
Cape Hatteras 366929330	135 ft R/V	24	Deep water sampling, CTDs, and surface sampling 5 NM N of wellhead	Deep water and natural gas sampling, W of well head	Deep water and natural gas sampling
Endeavor 367017340	185 ft R/V		In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying 4 drifters for NMFS	Deep water sampling and AUV	Deep water sampling and AUV
Gordon Gunter 303913000	224 ft R/V	33	Marine mammal surveying NE to SW transects S of FL panhandle, night acoustic surveys cross shelf	Marine mammal survey	Marine mammal survey
Jack Fitz 366765580	165 ft OSV	26	Deepwater ROV sampling W of wellhead at 2 km ring	Deep water sampling	Deep water sampling
NAVOcean Sea Gliders	2 AUV's		Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions
Ocean Veritas 367116090	194 ft M/V	41	Inport Port Fourchon, LA	Inport Port Fourchon, LA	In Port Fourchon, LA
Pisces 369970145	209 ft R/V	38	Reef Fish survey on shelf break from Brownsville to Corpus Christi	Reef Fish survey	Reef Fish survey
Rachel Bordelon 367359570	150 ft OSV	20	In Houma, LA	Acoustic surveys	Acoustic surveys
Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	In Theodore, AL departing in PM	Subsurface (150m) sampling for hydrocarbons	Subsurface (150m) sampling for hydrocarbons

https://www.st.nmfs.noaa.gov/confluence/display/OOP/Daily+Vessel+Call+Notes

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Vessel Assignments for June 18, 2010 to June 20, 2010

Vessel - MMSI	*Type*	*Compliment*	*June 18, 2010*	*June 19, 2010*	*June 20, 2010*
Thomas Jefferson 369958000	208 ft R/V	33	Establishing baseline with CTD casts towards east, coastal sampling late PM	coastal sampling off LA	Coastal sampling

https://www.st.nmfs.noaa.gov/confluence/display/OOP/Daily+Vessel+Call+Notes

Document ID: 0.7.19.1893.8

NOAA NRDA Activities Report
6/19/2010
Information as of 6/18/10

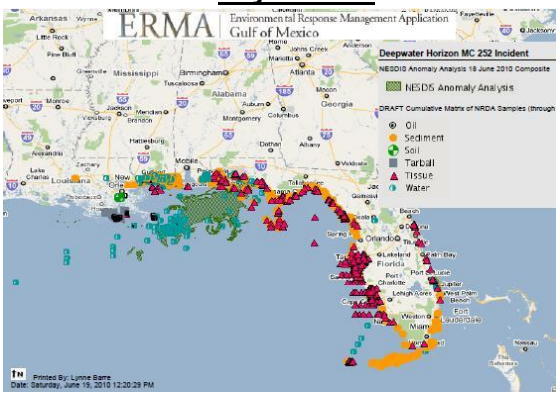
Critical Issues for Discussion/Action

None

Yesterday's Activities Recap

Technical Working Groups	Field Teams or Ship Deployed	Location	Data collected
Shoreline	4 Teams	1) Hospital & Wilkinson Bay, 2) Lake Grande Ecaille, 3) Calumet Island, and 4) Landry Bay, Mud Lake	Data sheets, waypoint tracklogs, and photos. Observations compared with SCAT data,
Water Column	*Brooks McCall*	5 km N of well head	Deep water sampling
	Jack Fitz	2 km ring from well head	Plume sampling
	Thomas Jefferson	Coastal sampling LA	CTD casts
	Endeavor	In transit	Deep water sampling, drifters
Marine Mammals and Sea Turtles	Dolphin photo-id survey	Barataria Bay and Bay des Ileitis	7 sightings with approx. 95 dolphins
	Gordon Gunter	Transects S of FL panhandle	Acoustic surveys

Key Results

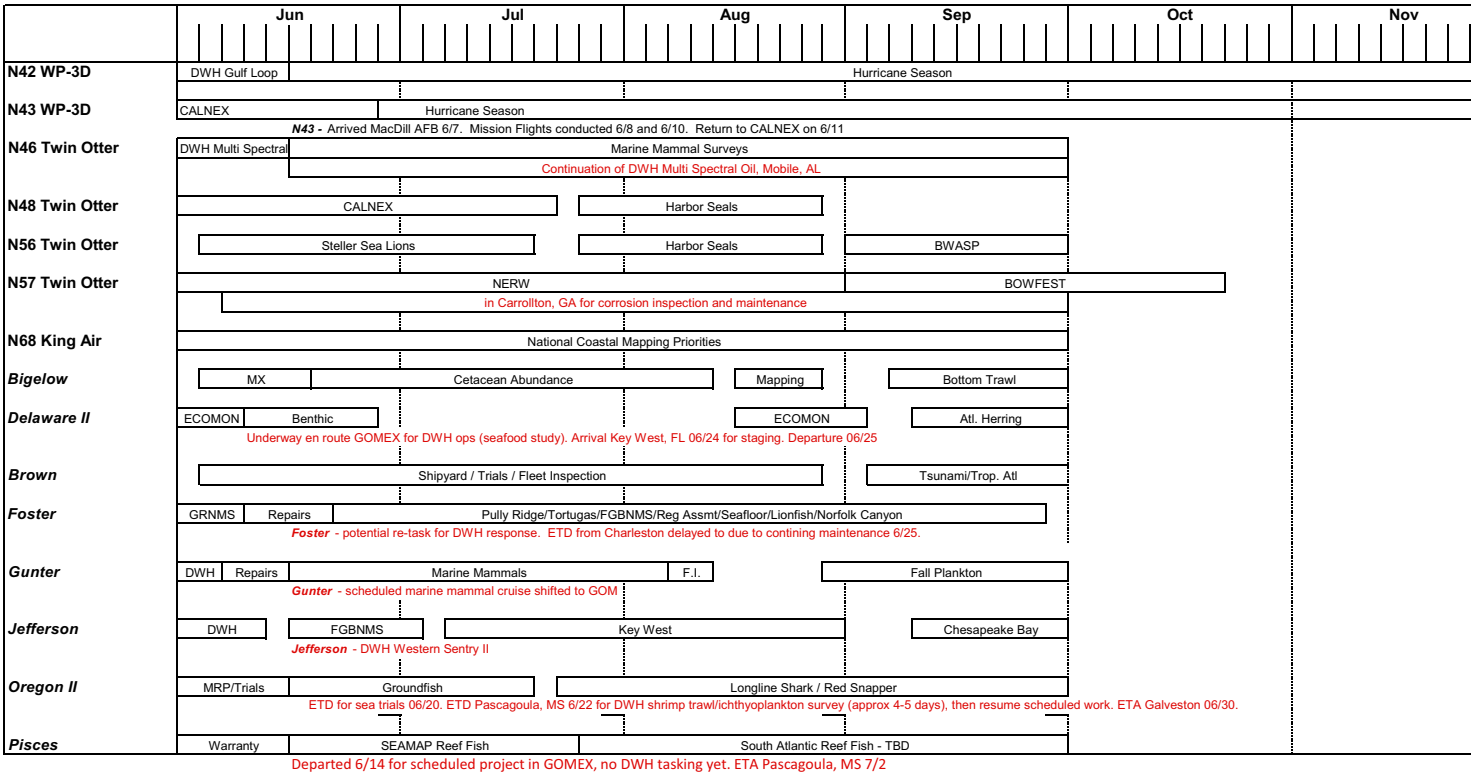


Lab sample inventory:
Total: 7,025 samples (60% water, 30%sediement)

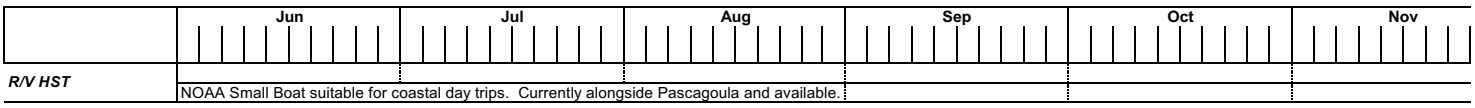
Upcoming Activities

- Technical working groups developing work plans and identifying opportunities for restoration
- Field Teams
  - Shoreline teams to Barataria Bay
  - SAV field team to St. Andrews Bay, FL 6/22
  - Marine Mammal photo-id and biopsy teams
  - Marine mammal and sea turtle flights M,W, Sat.
  - Fish team testing methods for submerged oil
  - Human Use boat ramp and shore fishing counts continuing in LA, MS, AL and FL

OMAO Assets (as of 6/19/10)



NOAA Line Office Assets



3/29/2011

Document ID: 0.7.19.1893.12

R/V Gandy	NOAA Small Boat conducting reef fish surveys out of Panama City, FL.			
R/V Caretta	NOAA Small Boat alongside Pascagoula. DHW begin 6/21.			
R/V Harold B	Scheduled to conduct trap/video surveys out of Panama City the reamainder of the month.			

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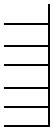
25' Parker NOS small boat w/ twin outboards in Charleston, SC, available for deployment and trailerable

Other Assets

	Jun	Jul	Aug	Sep	Oct	Nov
Beau Rivage	In Panama City gearing up bottom long line operations					
Brooks McCall	Deep water sampling 5km N of wellhead and working NE and E at 5km.					
Bunny Bordelon	In Houma, LA					
Capt Hatteras	Deepwater sampling, CTD's, and surface sampling 5nm N of wellhead.					
Endeavor	In transit to working grounds, ETA approx 0000, 19 JUN 10. Deploying four drifters for NMFS.					
Jack Fitz	Deepwater ROV sampling W of wellhead at 2km ring.					
Ocean Veritas	In Port Fourchon, LA					
Pelican	LOOP current study for MMS scheduled to begin 6/27					
Rachel Bordelon	In Houma, LA					
Ryan Chouest	In Theodore, AL, departing in PM					
Walton Smith	In Miami, FL					
IOOS Gliders	DWH* Monitoring for oil in Florida coastal waters from Tampa to FL Keys. *No end date specified for gliders.					
NAVO Gliders	Monitoring and sampling oceanographic conditions					

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3/29/2011

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Proposed NOAA Asset DWH Response Schedule

SHIPS				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
Gunter	June 5	June 26	Repairs/ABS inspection scheduled for 6/5-6/14 GU-10-02 Leg 1 - Marine Mammals 06/15 – 06/26	Underway for DWH ops (marine mammal survey). ETA Mobile, AL 6/21 for repairs (~ 2 days in drydock) then resume ops. ETA Pascagoula, MS 6/26
Foster	June 5	June 19	None: NF-10-05, Grays Reef Comparison Cancelled.	a/s Charleston, SC for z-drive repairs. Cancelled leg 2 of GRNMS project in order to complete repairs and allow time to transit to GOM in support of DWH efforts. Departure delayed to June 25, GOM arrival ~ June 30th. Awaiting final DWH project instructions and tasking.
Thomas Jefferson	June 15	tbd	TJ-10-03 FGBNMS	Underway for continued DWH ops (acoustics and water sampling). Replenish supplies 06/21, Pascagoula. ETA Key West, FL 7/2
Oregon II	June 21	July 5	Rd-10-01 Summer groundfish Leg 2 loses 9 DAS (much of the area typically surveyed during this project is likely going to be off limits due to the oil.)	ETD for sea trials 06/20. ETD Pascagoula, MS 6/22 for DWH shrimp trawl/ichthyoplankton survey (approx 4-5 days), then resume scheduled work. ETA Galveston 06/30.
Delaware II	June18	tbd	DE-10-05 Benthic Habitat	Underway en route GOMEX for DWH ops (seafood study). Arrival Key West, FL 06/24 for staging. Departure 06/25
Foster	July 5	July 18	NF-10-07 Tortugas Eco Reserve loses all 7 DAS	Allows 2 weeks for z-drive repairs alongside in Pascagoula
Gunter	July 18	August 4	GU-10-02 Marine Mammals, Leg 3 – lose 14 DAS. Currently this project is scheduled for Atlantic Ocean, but there are discussions of moving this effort to the Gulf instead. If project	GU would have to resupply fresh water one time during this mission period

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			remains in Atlantic, GU isn't an option	
Pisces	August 5	September 3	PC-10-04 CoOp Reef Fish Survey loses 23 DAS	This 30 day mission would have to be broken into 2 or 3 legs w/ T&Gs for water
Oregon II	September 3	September 28	Rd-10-02, Shark/Snapper Longline loses all of Leg 4 and most of Leg 3. Estimate losss of ~20 DAS. However, much of the project's survey area is impacted by oil	This 26 day mission would have to break into 2 or 3 legs for water and reprovisioning

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Aircraft				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
N42RF WP-3D		June 15	Hurricane Season	Funding ends on June 15. Gulf Loop Current flights could be rescheduled around any tasking for Hurricanes. Hurricane taskings would delay Gulf Loop Current flights by several days. DWH Loop Current flight, departed 6/18, 0900L, MacDill AFB
N43RF WP-3D	TBD	TBD	CALNEX (OAR California air quality study)- Potential loss of 1 to 3 days	Reassignment to DWH for air quality study per OAR request. Arrived MacDill 6/7. Mission Flights conducted 6/8 and 6/10. Returned to CALNEX 6/11.
N46RF Twin Otter	April	September 30	Alaska Marine Mammal Surveys	Extending Multi Spectral Oil Analysis flights beyond June 15 will impact Alaska Marine Mammal surveys. Additionally, engine overhaul date will be accelerated due to increased utilization and installation of extended range fuel tank will be delayed.
N57RF Twin Otter	June 7	September 30	Northeast Right Whale / BOWFEST	DWH Marine Mammal flights tasking resumed June 7. Anticipated schedule is approximately 5 flights every 14 days. Tasking could be flown on Twin Otter N46RF but belly port will be unavailable for use. Additional crew would be required for N46F due to crew duty day limitations.
N68RF King Air	April	September 30	National Coastal Mapping Priorities	Risk of not meeting GPRA goals for shoreline mapping.

Received(Date): Sun, 20 Jun 2010 12:33:04 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: Actions from this mornings call-June 20
To: Jen Pizza <Jen.Pizza@noaa.gov>
Cc: "dave.westerholm@noaa.gov" <Dave.Westerholm@noaa.gov>,"David.Kennedy@noaa.gov" <David.Kennedy@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Summary of actions from this morning's call.

Fisheries

- Will investigate what "Dolphin necropsy status was re-evaluated for all cases, causing numbers in each category to be recalculated" really means and report back.

Science

- Bob Haddad will follow-up with EPA tonight on the status of their dispersant testing to ensure that EPA and NOAA are using the same method and will report back tomorrow.
- Science to look at the toxicity of two of the dispersant compounds-propylene glycol (1,2-propanediol) and 2-butoxy ethanol.
- Science box on engagement:
  - to continue to examine engaging with the external community e.g., monthly or bimonthly science meetings.
  - investigating how NOAA will engage with those institutions receiving BP funding.
  - Need to examine how to fully engage with social science
- Need to follow-up on the status of the June 30 meeting.-From Andy Winer-"FYI. Upcoming summit in Mississippi dealing with social and economic issues. I am trying to determine what role, if any, NOAA or Sea Grant have at this Summit." - [Additional information was recevied by Andy and LaDonn Swann. Dr. Robinson was copied]

Data and Information

- Joe will investigate posting historical data to ERMA and how we can highlight new information being posted (e.g., press release, etc).

Received(Date): Mon, 21 Jun 2010 12:58:31 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for June 20

Gulf of Mexico Oil Spill Response Update

06/20/2010 – 9:00 AM EDT

BP is working as part of the Unified Command to accomplish three main objectives in the Gulf of Mexico:

1. Offshore - to stop the flow of oil on the sea floor;

2. Offshore – to minimize impacts of the spill on the surface; and

3. Onshore to protect and cleanup the shoreline, inform the public, and compensate impacted people.

Highlights

- 11,047 barrels of oil captured by the LMRP Cap on June 19.
- Q4000 drilling platform connected to valves on blowout preventer captured and flared 9,994 barrels of oil on June 19.
- Over $107 million in claims paid as of June 19 – see State Summaries.
- Over 100,000 Alternative Response Technology submissions have been received.

Offshore – Sea Floor

BP's priority is to contain the oil spill and complete relief wells to kill the flow.

Containment Recovery

ξ Lower Marine Riser Package (LMRP) Cap – 11,047 barrels of oil were captured through the LMRP cap during the past 24-hour period (an additional 14,446 barrels were captured on Friday). Total recovery from the LMRP Cap is 238,870 barrels to date. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* The gas is being flared; 25.6 million cubic feet were burned on June 19 (an additional 29.6 million cubic feet were captured on Friday).

ξ Q4000 Direct Connect to Blowout Preventer – This containment system, which is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel, flared 9,994 barrels of oil and 17.8 million cubic feet of gas on June 19 (an additional 10,016 barrels of oil and 17.8 million cubic feet of gas were flared on Friday). Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas.

ξ Permanent Riser Systems – BP is bringing in two additional ships that will be connected to "permanent riser systems." These systems will be capable of quick disconnect/reconnect in the event of a hurricane. The first riser has been fabricated and is being installed. The second riser is in the design stage. More information can be found under "Technical Update" on BP's website at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033572&contentId=7061710

New Technical Update slides - June 18th:
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/Technical_briefing_061810.pdf

-

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, with approximately 17,780 gallons applied on June 19.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

ξ The first relief well (work being performed by the *Development Driller III*) is at approximately 16,000 feet below sea level. This well was "spudded" on May 2.

ξ The second relief well (work being performed by *Development Driller II*) is at approximately 10,000 feet below sea level. Drilling began on May 16.

Offshore – Surface Response

Skimming Vessels – Over 400 skimmers designed to separate oil from water are deployed across the Gulf. Over 530,000 barrels of oil-water mix have been recovered and treated.

Surface Dispersant – 8,380 gallons of dispersant were applied on the surface yesterday.

In-Situ Burning – 5 burns were conducted in the last 24-hour period (an additional 16 burns were conducted on Friday). 150,000 total barrels are estimated to have been consumed through burns.

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented based on the type of impact or location and trajectory of the spill. Monitoring and sampling programs are being conducted for:

- air quality
- water quality
- water column sampling
- submerged oil, and
- worker health.

Sampling data can be found at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill. The tool integrates the latest data on the oil spill's trajectory, fishery closed areas, wildlife and place-based Gulf Coast resources, locations of oiled shoreline and other data points. The BP mapping tool is located at:

http://www.gulfofmexicoresponsemap.com. The U.S. Government has also created a mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products –

- BP is receiving approximately 5,000 suggestions per day on innovative ways to stop the flow of oil or contain the oil spill. Our team of engineers is reviewing these as quickly as possible. To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.

- The U.S. Government has also issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That announcement can be found online at: https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore – Shoreline Protection and Funding

Boom Update – More than 2.6 million feet of containment boom is deployed or assigned across the Gulf with 762,000 feet in staging areas. 3.9 million feet of sorbent boom is deployed with more than 1.9 million feet in staging areas.

Volunteers and Training – Volunteers are being trained in five different modules that range from safety for beach clean-up, to wildlife monitoring, handling of hazardous materials and vessel operation for laying boom. Information about training can be found at www.deepwaterhorizonresponse.com under "volunteers."

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com

- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

Onshore – Claims

Over $100 million in claims paid - BP has paid $107 million to residents along the Gulf Coast for claims filed as a result of the oil spill in the Gulf of Mexico. BP has issued more than 31,000 checks in the past seven weeks in response to about 64,000 claims to date. A 1,000-member claim team is working around the clock to receive and process claims. There are 33 field offices set up in the States of Louisiana, Mississippi, Alabama and Florida, and BP is accepting calls through an 800 number as well as accepting applications online. BP has received about 84,000 calls for claims. The average time from filing a claim to checks being issued is 4 days for individuals and seven days for more complex business claims that have provided supporting documentation. BP's commitment is to move expeditiously and fairly to meet the needs of the residents of the Gulf Coast.

Filing Claims – The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: www.bp.com/claims. *Note: No person asserting a claim or receiving payment for interim benefits will be asked or required to sign a release or waive any rights to assert additional claims, to file an individual legal action, or to participate in other legal actions associated with the Deepwater Horizon incident.*

State-by-State Claims Summary as of June 19

State	
Louisiana	$59,353,335
Alabama	$18,429,135
Florida	$15,072,798
Mississippi	$11,313,404
Texas	$1,810,738
Georgia	$325,274
Other	$1,175,901
Grand Total	$107,480,585

Claims Offices – 33 Claims Offices are open across the Gulf Coast to provide locations where people can go to file or discuss claims. There are more than 170 operators answering phones, and 667 claims adjusters are staffing the offices.

Louisiana (14 locations) –

ξ Belle Chasse/Gretna

2766 Belle Chasse Hwy

Belle Chasse, LA 70037

ξ Chauvin (Terrebonne Parish)

5703 Hwy 56

Chauvin, LA 70344

ξ Cut Off (Lafourche Parish)

Tarpon Heights Shopping Center

Unit 2

16263 E. Main Street

Cut Off, LA 70345

ξ Grand Isle (Jefferson Parish)

3811 LA 1 (Community Center)

Grand Isle, LA 70358

ξ Houma (Terrebonne Parish)

Plaza Caillou Shopping Center

814 Grand Caillou Road

Suite 2 & 3

Houma, LA 70363

- Lafitte (Jefferson Parish)

2654 Jean Lafitte Blvd

Town Hall

Lafitte, LA 70067

- Morgan City (St. Mary Parish)

931 US Hwy 90 East

Bayou Vista, LA 70380

- New Orleans East (Orleans Parish)

4375 Michoud Blvd

New Orleans, LA 70461

- New Orleans East (Orleans Parish) – BP Office

4655 Michoud Blvd., Suite D6 (first floor)

New Orleans, LA 70461

- New Iberia (Iberia Parish)

956 S. Lewis Street

New Iberia, LA 70560

- Slidell (St. Tammany Parish)

2040 Gause Blvd., Suite 10

Slidell, LA 70461

- St. Bernard (St. Bernard Parish)

1345 Bayou Rd

Saint Bernard, LA 70085

- Venice/Boothville (Plaquemines Parish)

41093 Hwy LA 23

Boothville, LA 70038

- Westwego (Jefferson Parish)

1280 Westbank Expressway

Westwego, LA 77094

Mississippi (3 locations) –

- Bay St. Louis (Hancock County)

1171 Highway 90

Bay St. Louis, MS 39520

- Biloxi

920 Cedar Lake Rd, Suite K

Biloxi, MS 39532

- Pascagoula

5912 Old Mobile Hwy

Suite 3

Pascagoula, MS 39581

Alabama (5 locations) –

- Bayou LaBatre

13290 N. Wintzell Avenue

Bayou LaBatre, AL 36509

- Dauphin Island (Mobile County)

1008 Alabama Avenue

Dauphin Island, AL 36528

- Foley (Orange Beach/Gulf Shores/Bon Secour)

1506 North McKenzie Street (HWY 59)

Suite 104

Foley, AL 36535

- Gulf Shores / Orange Beach (Baldwin County)

24039 Perdido Beach Blvd

Suite 1

Orange Beach, AL 36561

- Mobile (Mobile County)

325 East I-65 Service Rd S

Suite 1

Mobile, AL 36606

Florida (10 locations) –

- Apalachicola (Franklin County)

194 14th Street

Suite 105

Apalachicola, FL 32320

- Crawfordville (Wakulla County)

3010 Crawfordville Hwy

Suite A&B

Crawfordville, FL 32327

- Ft. Walton Beach (Okaloosa County)

348 SW Miracle Strip Pkwy

Suite 13

Fort Walton Beach, FL 32548

- Gulf Breeze (Santa Rosa County)

5668 Gulf Breeze Pkwy

Unit B-9

Gulf Breeze, FL 32563

- Marathon (Monroe County)

7885 Overseas Hwy

Marathon, FL 33050

- Panama City (Bay County)

7938 Front Beach Road

Panama City Beach, FL 32408

- Pensacola (Escambia County)

3960 Navy Boulevard

Suite 16-17

Pensacola, FL 32507

- Port St. Joe (Gulf County)

106 Trade Circle

Suite A

Port St. Joe, FL 32456

ξ Key West (Monroe County)

3706 N. Roosevelt Blvd

Suite H

Key West, FL 33040

ξ Santa Rosa Beach (Walton County)

5008 US Hwy 98W

Unit 6&7

Santa Rosa Beach, FL 32459

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554

MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	

Karen St John

BP America

Sr. Director, Regulatory Affairs

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Received(Date): Mon, 21 Jun 2010 12:08:12 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: My thoughts on key messages
To: David.Kennedy@noaa.gov
Cc: Jainey.Bavishi@noaa.gov, Joe.Inslee@noaa.gov, John.Rapp@noaa.gov,Matthew.Thorburn@noaa.gov, Shelby.Walker@noaa.gov

My Thoughts:
1. Use Science to Respond
2. Protect human health
3. Protect our fish and wildlife
4. Assess Damage
5. Restore and Recover

If you just want 3 then:
1. Use Science to Respond
2. Protect human health, fish and wildlife
3. Assess Damage, Restore and Recover

Here is how some of our work falls out into the above categories
1. Use Science to Respond (subsea, surface and shoreline)
   SSCs, weather, oceanographic data, modeling, undersea strategies, at sea actions (dispersants, in situ burn, boom placement), shoreline clean-up, alternative technologies, scientific workshops
2. Protect human health
   Seafood safety testing, fisheries closures, assisting EPA with air monitoring
3. Protect our fish and wildlife
   Response strategies, booming, rescue, rehab, coordination with ops on EFH, ESA, MMA, etc.
4. Assess Damage
   SCAT, damage assessment sampling and evaluation
5. Restore and Recover
   Recommendations on cleanup, alternative technologies such as bioremediation, scientific/academic involvement, long-term strategies

David.Kennedy@noaa.gov wrote:

> FYI

> Subject:
> FW: The federal DWH effort
> From:
> Mary Glackin <Mary.Glackin@noaa.gov>
> Date:
> Sun, 20 Jun 2010 18:19:23 -0400
> To:
> David Kennedy <David.Kennedy@noaa.gov>
> To:
> David Kennedy <David.Kennedy@noaa.gov>

Here is the other one.

From: Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
Sent: Thursday, June 17, 2010 1:33 PM
To: Justin Kenney; 'Mary.Glackin@noaa.gov'; David Kennedy (David.Kennedy@noaa.gov); Andrew Winer; Margaret Spring
Cc: Jane Lubchenco
Subject: The federal DWH effort

This may be too in the weeds, but it may trigger some ideas. Just sharing some packaging thoughts.

Here's a reorganized list to consider refining vis a vis the federal response.

The What

1. Kill the well
2. Intercept the oil
3. Clean it up
4. Save Wildlife
5. Protect Seafood Markets
6. Protect Citizen and Worker Health
7. Assess Damage
8. Restore/Recover health of the Gulf and Gulf Coast communities

The How

1. Direct BP
2. Use the best science and scientists
3. Hire Locals
4. Work closely with state and local governments

5. Be open and transparent: Share information widely
6. Facilitate reimbursements/claims

Received(Date): Wed, 23 Jun 2010 16:21:06 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: FW: Oil Spill Clean-up X CHALLENGE
To: "Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
Cc: "Dave Westerholm (Dave.Westerholm@noaa.gov)" <Dave.Westerholm@noaa.gov>
Ocean X PRIZE Suite AdvisoryCommittee- Biographical Information 032310.pdf

Here is the background on this X Prize proposal on oil spills.

I asked Dave to come up with key issues we need to address, and any suggestions for how to improve, then present to Dr. Lubchenco/Dr. Robinson to determine whether to go forward and what team we should put on this and reach out to the X-Prize committee.

I would suggest including others who have been on top of the X-Prize topic in a non-oil spill context (OAR), which include Steve Hammond, Paul Sandifer (and PCO – Frank Parker), so we don't disconnect this too much. In fact, OAR could help staff on next steps, with ORR members as key advisors on the specific topic.

Thanks,

Margaret

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

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From: Kalil, Thomas A. [mailto:Thomas_A._Kalil@ostp.eop.gov]
Sent: Tuesday, June 22, 2010 1:10 PM
To: Margaret Spring
Subject: RE: Oil Spill Clean-up X CHALLENGE

Dear Margaret:

You are the first.

I am attaching the Ocean X Prize advisory committee.

OSTP staff identified the following subject matter experts at NOAA.

Restoration Project

· Margaret Davidson

Director, Coastal Services Center

margaret.davidson@noaa.gov

Phone: B6 Privacy

· Buck Sutter

Deputy Regional Administrator, NMFS SE Regional Office

buck.sutter@noaa.gov

Phone: B6 Privacy

Get the Oil Out of the Water Project

· Amy Merten

NOAA Office of Response and Restoration

Amy.Merten@noaa.gov

· Bill Lehr

NOAA Emergency Response Division

Bill.Lehr@noaa.gov

From: Margaret Spring [mailto:margaret.spring@noaa.gov]
Sent: Tuesday, June 22, 2010 1:06 PM
To: Kalil, Thomas A.
Subject: RE: Oil Spill Clean-up X CHALLENGE

Great, t hanks! Who have you discussed with at NOAA thus far?

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

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From: Kalil, Thomas A. [mailto:Thomas_A._Kalil@ostp.eop.gov]
Sent: Tuesday, June 22, 2010 1:03 PM
To: Margaret Spring
Subject: Oil Spill Clean-up X CHALLENGE

Dear Margaret:

I think the idea below is worth pursuing – and I am on your schedule for 5:30 this evening to discuss

Best,

Tom Kalil

Name: Oil Spill Clean-Up X CHALLENGE

Purse: $3M

"Develop rapidly-deployable and affordable methods for clean-up of crude oil on the coastline and on the sea surface."

Guidelines Summary:

Teams register to compete in one of two categories:
1. Coastal Clean Up; or
2. Sea Surface Clean Up.

The cost to register will be $2,500.00 for each category.

Teams will be judged on their plans to maximize clean-up at the lowest unit cost in these 2 categories using approaches that may include containment, dispersant or bio-degradation. Plans must be submitted online via a form-based query. Submissions can supplemented with additional materials (videos, drawings, and the like.) Submissions must be received in 30 days from the launch of the competition.

Teams for Costal Clean Up must submit a their plans to:

· Clean-up a minimum of 1 mile of coastal zone from 95% of crude oil contaminants within 7 days.
· Show that all material and techniques are environmentally safe
· Show solution deployment at mid-tidal zone.
· Demonstrate that clean-up waste can enter the commercial waste management infrastructure.
· Estimate required manpower.
· Demonstrate that solution can be deployable within 30 days of design completion in a coastal zone of the following conditions: marshes, sandy beaches, rocky shores and pebble beaches.

Teams for Sea Surface Clean Up must submit a design to:

· Clean up 250,000 barrels of oil at sea surface, within 1 mile of spill site, under conditions of 2-3 feet of surface waves, air temperature of 25C and 85% humidity with 50% overcast conditions.
· Team must demonstrate containment of 95% of its content in a period of 5 days.
· Demonstrate that clean-up waste can enter the commercial waste management infrastructure.
· Estimate required manpower.

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· Demonstrate that solution can be deployable within 30 days of design completion.

Judging and winning:

Submissions will be judged by a panel of at least 5 judges. The top ten ideas (five from each category) will be selected and these top finalists will each be awarded $100,000.

The top 10 teams will have 30 days to develop and deploy their technology/approach.

Each of the teams will compete in a date-certain head to head competition where teams will have 1 day to clean-up a designated segment of Beach (category 1) or Sea (category 2).

· **The team that cleans up the most amount of linear feet of shoreline in 8 hours for the least unit/cost ($/acre) will win $1M.**

· **The team that cleans up the most amount of oil (at a density typical of crude within 1 mile of spill site) from the sea in 8 hours for the least cost per barrel will also win $1M.**

Costs will include all costs use to manufacture and deploy solutions for the time period under evaluation including: raw material costs, manufacturing and deployment costs, disposable costs (if any) and manpower costs (average cost of $x/hr/person)

Background info on existing clean-up methods:

Booms: Contain the spill with booms and collect it from the water surface using skimmer equipment. Skimmers float across the top of the slick contained within the boom and suck or scoop the oil into storage tanks on nearby vessels or on the shore. However, booms and skimmers are less effective when deployed in high winds and high seas.

Dispersant: The use dispersants to break up the oil and speed its natural biodegradation. Dispersants act by reducing the surface tension that stops oil and water from mixing. Small droplets of oil are then formed, which helps promote rapid dilution of the oil by water movements. The formation of droplets also increases the oil surface area, thus increasing the exposure to natural evaporation and bacterial action. Dispersants are most effective when used within an hour or two of the initial spill. However, they are not appropriate for all oils and all locations.

Biodegradation: To introduce biological agents to the spill to hasten biodegradation. Most of the components of oil washed up along a shoreline can be broken down by bacteria and other microorganisms into harmless substances such as fatty acids and carbon dioxide. The natural process can be speeded up by the addition of fertilizing nutrients like nitrogen and phosphorous, which stimulate growth of the microorganisms concerned. However the effectiveness of this technique depends on factors such as whether the ground treated has sand or pebbles and whether the fertilizer is water soluble or applied in pellet or liquid form.

Manual labor: The use of raw manpower to manually clean-up shorelines with basic tools. This method

Document ID: 0.7.19.1956

is time intensive and capital intensive.

Chris Barnes
Project Director, NEPTUNE Canada

Chris Barnes is Project Director for NEPTUNE Canada (2001-), part of the large Canada/US NEPTUNE megaproject that will revolutionize the ocean sciences. He has secured over $100 million toward the installation of the world's first regional cabled ocean observatory and leads a staff of over 30 specialists. For the previous decade, he served as Director of both the Centre for Earth and Ocean Research and the School of Earth and Ocean Sciences at the University of Victoria, British Columbia. Geology degrees (Birmingham, Ottawa) and a PDF (Wales) were followed by an academic appointment at the University of Waterloo in 1965, including as Chair of Earth Sciences (1975-81). In a similar chair position at Memorial University of Newfoundland (1981-87), he also established and led the Centre of Earth Resources Research. From 1987-89, he was the Director General of the Sedimentary and Marine Branch of the Geological Survey of Canada.

Chris Barnes has served on many boards and councils, including as President of the Geological Association of Canada, the Canadian Geoscience Council, and the Academy of Science of the Royal Society of Canada; also as Group Chair of both Earth Sciences and Interdisciplinary for the Natural Sciences and Engineering Research Council of Canada (NSERC); and as a commissioner of the Canadian Nuclear Safety Commission and a member of the International Ocean Drilling Program and the International Commission on Stratigraphy. His own research involves geology, micropaleontology, stratigraphy, paleoceanography and paleoclimatology. He has authored or co-authored over 150 publications.

For his various contributions, Chris Barnes has received the J. Willis Ambrose, Elkannah Billings and Past Presidents medals of the Geological Association of Canada, the Bancroft Award of the Royal Society of Canada, the Pander Society Medal, and the Queen's Golden Jubilee Medal. He was awarded an Honorary Doctor of Science degree from the University of Waterloo in 2007. Fellowship has been awarded in the Royal Society of Canada and the National Academy of Sciences, Cordoba, Argentina. In 1996, he was appointed a Member of the Order of Canada.

James G. Bellingham
Chief Technologist, Monterey Bay Aquarium Research Institute

James G. Bellingham is the Chief Technologist at the Monterey Bay Aquarium Research Institute. His personal research activity revolves around the development and use of Autonomous Underwater Vehicles (AUVs). In the process of developing these vehicles, he spent considerable time at sea, leading over 20 AUV expeditions. Dr. Bellingham leads the Autonomous Ocean Sampling Network (AOSN) program at MBARI, which uses fleets of autonomous vehicles to adapt to and observe rapidly changing oceanographic processes.

Curtis R. Berrien
Senior Organizational Consultant, Sustainability Partners

Curt Berrien is a senior organizational consultant with a North American reputation. Prior to

joining Sustainability Partners, Curt was president of The Bay Group, a training and consulting organization specializing in the education of executives on ethics and the installation of systems and management practices that support ethical and socially responsible behavior. He also was Senior Vice President and member of the board at the Forum Corporation, a global leader in workplace learning and organizational change with 15 offices worldwide. He has completed extensive consulting and executive development assignments with numerous organizations including Bank of America, Citicorp, Wells Fargo Bank, J. P. Morgan Chase, Fidelity Investments, ARCO, Chevron, Shell, Apple Computer, Microsoft, IBM, Hewlett-Packard, Kaiser Permanente, and Deloitte & Touche.

Edward Cassano
Senior Director, Monterey Bay Aquarium Department of Conservation Outreach
Ed is currently the Senior Director of Monterey Bay Aquarium's Department of Conservation Outreach. He leads the Aquariums Sustainable Seafood Initiative and directs the Aquariums Seafood Watch program.

For 14 years he was a commissioned officer with the Department of Commerce, National Oceanic & Atmospheric Administration, participating in many multi-disciplinary scientific missions and marine research programs concerned with fisheries and natural resource management (trawling, long-lining, marine mammal , sea bird research, and national marine sanctuary management)

He opened and ran the Santa Barbara Maritime Museum as its Executive Director. He also served as Vice President, Exploration & Expeditions for the Ocean Futures Society, he later became Vice President of Programs and Exhibits at the Aquarium of the Pacific, which included oversight of the aquariums husbandry, education and exhibit departments.

James P. Delgado, PhD
President and CEO, Institute of Nautical Archeology

James P. Delgado, PhD, FRGS, RPA, has led or participated in shipwreck expeditions around the world. His archaeological work has also included the excavation of ships and collapsed buildings along the now-buried waterfront of Gold Rush San Francisco. Dr. Delgado was the Executive Director of the Vancouver Maritime Museum in Vancouver, British Columbia for 15 years before becoming President of the Institute of Nautical Archaeology in April, 2008 (offices in Texas and Bodrum, Turkey). Previously, he was the head of the U.S. government's maritime preservation program and was the maritime historian for the U.S. National Park Service. A Fellow of the Royal Geographical Society and a Fellow of the Explorers Club, Dr. Delgado is the author or editor of over 30 books and numerous articles, most recently Khubilai Khan's Lost Fleet: In Search of a Legendary Armada, and Gold Rush Port: The Maritime Archaeology of San Francisco's Waterfront. His books Lost Warships: An Archaeological Tour of War at Sea and Across the Top of the World: The Quest for the Northwest Passage are both international best-sellers published simultaneously in North America and Britain.

Bill Doak
Partner, Kirvin Doak Communications

Considered one of the leading authorities in Las Vegas marketing and public relations, Bill brings nearly two decades of experience to Kirvin Doak Communications. His successful track record offers an invaluable mix of in-house resort marketing and agency public relations. Bill is responsible for overseeing strategic development for the agency and spearheads client work in the areas of marketing strategy and brand development. In the past four years he has helped design and oversee successful marketing public relations campaigns for several MGM MIRAGE resorts, Las Vegas developments and more than a dozen tourist-based product launches.

Jim Dufour
Associate Director of the Instrument Development Group,
Scripps Institution of Oceanography, UC San Diego

Jim Dufour is the Associate Director of the Instrument Development Group at Scripps Institution of Oceanography, UC San Diego. Since 198,2 Jim has developed and produced a myriad of oceanographic instruments, most recently the ALACE, SOLO, and Spray Autonomous Glider. His contributions have directly improved our understanding of the physical properties of the ocean and patterns of ocean climate variability. For the past 3 years, Jim has worked with global initiatives and programs for education, outreach, policy change, and alternative funding for environmental causes. He was recently appointed the Chief Environmental Officer for Dot Eco LLC, a group dedicated to promoting the acceptance and implementation of the eco top-level domain; a new community-based, environmental Internet resource. In addition, Jim is committed to finding sustainable solutions to the problem of marine debris in our oceans and sits on the Project Kaisei Advisory Committee.

Sylvia Earle, PhD
Explorer in Residence, National Geographic

Sylvia A. Earle is a former chief scientist of the National Oceanic and Atmospheric Administration (NOAA) and a leading American oceanographer. She was among the first underwater explorers to make use of modern self-contained underwater breathing apparatus (SCUBA) gear, and identified many new species of marine life. With her former husband, Graham Hawkes, Earle designed and built a submersible craft that could dive to unprecedented depths of 3,000 feet. In addition to publishing numerous scientific papers on marine life, Earle is a devout advocate of public education regarding the importance of the oceans as an essential environmental habitat. She is currently the president and chief executive officer of Deep Ocean Technology and Deep Ocean Engineering in Oakland, California, as well as the coauthor of *Exploring the Deep Frontier: The Adventure of Man in the Sea and sole author of Sea Change: A Message of the Ocean,* published in 1995.

Bob Gagosian

President/CEO, Consortium for Ocean Leadership

In November of 2007, Robert B. Gagosian was appointed the first President/CEO of the Consortium for Ocean Leadership, which was formed by the merger of the Consortium for Oceanographic Research and Education (CORE) and the Joint Oceanographic Institutions (JOI). As President, Gagosian oversees the management of major research and education programs, accounting for roughly $120 million. Gagosian also coordinates the community's advocacy efforts, articulating to policy makers the importance of ocean research and education to the nation. As a research scientist, Gagosian studied organic substances produced by marine organisms and their transport and transformation as they disperse through the water column to the seafloor. His research led to the importance of the atmosphere as a transport mechanism for land-derived organic material to the open ocean.

Dave Gallo
Director of Special Communications Projects, Woods Hole Oceanographic Institution

David Gallo works to push the bounds of oceanic discovery. Active in undersea exploration (sometimes in partnership with legendary *Titanic*-hunter Robert Ballard), he was one of the first oceanographers to use a combination of manned submersibles and robots to map the ocean world with unprecedented clarity and detail. He was a co-expedition leader during an exploration of the RMS *Titanic* and the German battleship *Bismarck,* using Russian Mir subs. On behalf of the Woods Hole labs, he appears around the country speaking on ocean and water issues, and leading tours of the deep-ocean submersible Alvin.

Jeff Handy
Former US Attorney, Environmental Litigation

Jeff Handy has a BA in Economics from UC Davis, an MS in Forest Economics from Oregon State Univ, and a JD from Lewis & Clark Law School. Jeff worked for the Oregon Department of Forestry, where he provided advice. After receiving his JD, Jeff worked for the US Forest Service in Washington DC, where he provided advice for the nationwide forest planning effort. Jeff was the lead Forest Service lawyer during the northern spotted owl controversy and subsequent litigation. After returning to Portland, Jeff joined the US Attorneys Office, where he specialized in environmental litigation, and served as litigation counsel to the Bonneville Power Administration. Though Jeff retired in 2006 his interest in environmental matters continues.

Graham Hawkes
Chief Engineer, Deep Flight

Graham Hawkes, an internationally renowned ocean engineer/inventor, has been responsible for the design of a significant percentage of all manned (and more than 300 remote) underwater vehicles built for research or industry worldwide, including the *Wasp* and *Mantis* Atmospheric Diving Suits, the *Deep Rover* research submersibles – which were recently featured in the James Cameron 3-D Imax film, "*Aliens of the Deep*," and the *Deep Flight* series

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of winged submersibles. Mr. Hawkes currently holds the world record for the deepest solo dive (3,000 feet), which he achieved while test piloting his *Deep Rover* submersible. Mr. Hawkes has successfully founded and managed six high technology companies, including, most recently Precision Remotes, Inc., which manufactures remote (land-based) systems for the military. Precision Remotes' products were recently hailed by Time Magazine as one of the best inventions of 2004; and Hawkes Ocean Technologies (HOT), which designs and builds the Deep Flight winged submersibles and other state of the art vehicles for deep ocean exploration. HOT's current projects include: the next generation of the Deep Flight winged submersibles; and the *Spider Optic Vehicle*, a highly advanced, new genre of Remotely Operated Vehicle (ROV) being developed for NASA and other private clients.

Tony Haymet, PhD
Director, Scripps Oceanographic Institute

Dr. A.D.J. "Tony" Haymet became Vice Chancellor for Marine Sciences, Director of Scripps Institution of Oceanography and Dean of the Graduate School of Marine Sciences, UC San Diego, in September 2006. Dr. Haymet is a highly distinguished researcher who comes to UC San Diego from his position as the Science and Policy Director and former Chief of Marine and Atmospheric Science at the Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia's national science research agency. CSIRO is one of the largest and most diverse research agencies in the world. Dr. Haymet is a tenured professor of oceanography at Scripps. He holds a Ph.D. from the University of Chicago and a Doctor of Science from the University of Sydney.

Jim Hekkers
Managing Director, Monterey Bay Aquarium

Jim Hekkers is managing director of the Monterey Bay Aquarium and oversees its senior management team, day-to-day operations and long-term planning. Regarded as one of the world's premiere aquariums, the nonprofit Monterey Bay Aquarium hosts an average of 1.8 million visitors a year and is a leader in inspiring conservation education and action. Hekkers previously had served at the non-profit aquarium as vice president of communications and external affairs between November 1993 and December 1997. He currently serves on the board of the Pacific Grove Museum Association, and has previously served on the boards of the Denver Audubon Society and convention and visitors bureaus in Chattanooga, Denver and Monterey. He is an advisor to The Ocean Project, and a member of the American Association of Museums and the Association of Zoos and Aquariums.

Brian Huse
Executive Director, Coral Reef Alliance

Now in his seventh year at Coral, Brian has worked in the environmental conservation and advocacy fields for twenty-five years. He began his career at the California League of Conservation Voters, where he spent a decade working on political campaigns and ballot

initiatives before joining the National Parks Conservation Association (NPCA) as its first Pacific regional office director. At the NPCA, Brian launched a national initiative for enhancing the management of marine resources under the National Parks Service jurisdiction. Leaving NPCA to work as a consultant, Brian played a key role in organizing the Ocean Wilderness Network, a collaboration of major West Coast environmental groups working to establish a network of marine protected areas. Before joining Coral in 2002, Brian served as the Executive Director of San Francisco Baykeeper and as a member of the Waterkeeper Alliance's Board of Directors. Brian has a degree in physiological psychology from the University of California, San Diego.

Scott McLean
Director, Ocean Networks Canada Centre for Enterprise and Engagement (ONCCEE)

Scott McLean is a Professional Engineer with over 20 years experience in the ocean technology sector. He is the Director of the Ocean Networks Canada Centre for Enterprise and Engagement (ONCCEE) , a Centre of Excellence in Commercialization and Research (CECR), where he is responsible for promoting ocean observing systems technology and public engagement in ocean exploration through ocean observing systems. Based at the University of Victoria, Canada he works in partnership with industry and other Ocean Networks Canada projects including VENUS and NEPTUNE Canada. Prior to joining ONCCEE Mr. McLean was the Chief Technology Officer and VP Research and Development at Satlantic Inc. Specific areas of expertise include technology transfer, sensor development, ocean observing system design and integrated sensor systems for environmental monitoring.

John Nightingale, PhD
President, Vancouver Aquarium Marine Science Centre

John Nightingale, Ph.D. is one of the most well-known and respected leaders in aquarium operations and management in North America. His work at the renowned Vancouver Aquarium Marine Science Centre, a nearly 50-year-old facility, has helped to maintain the Aquarium's legendary status as one of the world's most revered aquatic institutions. His background and lifelong work in formal and informal public education makes Nightingale a leader in the current rapid development of new educational efforts in aquariums, zoos and museums. Nightingale joined the Vancouver Aquarium in 1993, and since that time he has guided the expansion of the Aquarium's leadership in conservation research, while focusing operations on maintaining its financially self-supporting status.

R. T. (Phil) Nuytten
President and Founder, Nuytco Research Ltd.

Dr. Phil Nuytten has spent his life in subsea exploration. He has logged many thousands of hours underwater world-wide as a working commercial diver and as a developer of underwater equipment and techniques. He is widely regarded as one of the pioneers of the modern commercial diving industry and a significant force in the creation of new technology. Dr. Phil

Nuytten has earned many international honors and awards. These include commercial diving's highest award from the Association of Diving Contractors International, the Academy of Underwater Art and Sciences 'Nogi' award, induction into the 'Diving Hall of Fame', and the Explorer's Club's prestigious 'Lowell Thomas' Award. His goal has been to provide scientific, technical, military, and sport divers full access to continental shelf depths without the hazards of decompression, so that humans can explore, learn about and - ultimately - protect the world's oceans.

Michael J. Rauworth
Chair, American Sail Training Association

Michael Rauworth works principally as a maritime lawyer, but also chairs the American Sail Training Association, which speaks for the North American sailing ship fleet; it also conducts the Tall Ships Challenge® series of races and port events each summer, rotating among the coasts of North America. He keeps up a deep-draft Coast Guard license as a shipmaster and marine pilot — based on some 200,000 miles at sea as a master/deck officer in the merchant marine and Coast Guard, embracing marine research in the Arctic, Antarctic, and North Atlantic; extensive experience in sailing ships; and with nearly every other kind of vessel. Before retiring from the Coast Guard, he had involvement with virtually every aspect of its activities. He teaches marine insurance part-time at Massachusetts Maritime Academy.

Robson F. Storey
Professor of Polymer Science and Engineering

Storey is currently Professor of Polymer Science and Engineering within the School of Polymers and High Performance Materials at The University of Southern Mississippi, where he has held a faculty appointment for 26 years. He obtained B.S. degrees in Polymer Science and Mathematics in 1978 from The University of Southern Mississippi, and a Ph.D. in Polymer Science in 1983 from the University of Akron. He worked at American Cyanamid as a research chemist in 1982-1983. His research interests include cationic and anionic polymerizations, biomedical/biodegradable polymers, block and graft copolymers, star-branched polymers, and reactive oligomers.

S. Martin Taylor
CEO, Ocean Networks Canada

Martin Taylor is President and CEO of Ocean Networks Canada, the not for profit agency responsible for the management and development of the VENUS and NEPTUNE Canada ocean observatory programs, and the Ocean Networks Centre for Enterprise and Engagement, a federal centre of excellence for commercialization and research. Before assuming this position, he served for nine years (1998-2007) as the University of Victoria's first Vice-President

Document ID: 0.7.19.1956.1

Research. He has extensive experience serving on research boards at the federal and provincial levels. Martin Taylor is the author of two books and over 100 peer-reviewed publications in the field of environmental and community health.

Verena Tunnicliffe
Professor, Department of Biology and Earth & Ocean Sciences, University of Victoria
Research Chair and Director of the VENUS Project

"A job in academia is surely the most privileged employment imaginable. You are paid to select a frontier and go forth to discover while supported by staff and pushed by students. My personal voyage was rough in the early days in a profession where only a few women ventured. But, the thrill of discovery and collegial bonds push our exploration deeper. I have worked on mudflats, coral reefs, fjords, seamounts and deep-sea environments. My work focuses on animal adaptations to the challenges of the physical, chemical and geologic world. My work on hot vent communities has included an examination of how animal vent faunas around the world are related. Current work examines animal
communities that survive on undersea volcanoes. I currently hold a Canada Research Chair in Deep Oceans at the University of Victoria. I have also pursued interests in technological advances to improve deep ocean studies. I was the lead proponent for--and now Project Director of --the underwater cabled laboratory called VENUS that runs arrays of instruments on the seafloor near Victoria and Vancouver. "

Don Walsh
Founder, International Maritime, Inc.

Don Walsh served in the Navy from 1948 to 1975. During this interim he commanded a submarine in the Pacific Fleet. His shore duty assignments were in ocean science and technology. Walsh has a BS in engineering from Annapolis; an MS and PhD in oceanography from Texas A&M University, and an MA in political science from California State University at San Diego.

As an adventurer-explorer, he has worked in the deep oceans, polar regions and space. From 1959 to 1962 he was the first commander of the Navy's Bathyscaphe Trieste and was designated U.S. Navy deep submersible pilot #1 in 1959. Only two people have ever been to the deepest part of the world ocean, and Dr. Don Walsh is one of them. In 1960 Walsh, along with Swiss inventor Jacques Piccard, piloted the Trieste to a spot at the bottom of the Marianas Trench known as the Challenger Deep, which lies 35,800 feet (nearly seven miles) below the surface and some 200 miles southwest of the island of Guam.

Dr. Walsh first went to the Arctic in 1955 and Antarctic in 1971 as a member of Operation Deep Freeze '71. He has worked at both the North and South Poles, having made 10 expeditions to the Arctic and 16 to the Antarctic. His contributions to polar exploration were recognized in 1973 when a mountain ridge in the Antarctic was named for him.

Don has participated in most of Deep Ocean Expedition programs since the company was founded. This includes dives to the Titanic, the Mid-Atlantic ridge and ancient shipwrecks off Marseilles.

After retiring, Captain Walsh joined the University of Southern California (USC) to establish and direct the Institute for Marine and Coastal Studies, which has evolved into the Wrigley Institute for Environmental Studies. At USC, he also served as the dean of marine programs and was a professor of ocean engineering. In 1983 he left the university to devote full time to International Maritime, Inc. (IMI), a consulting practice he formed in 1976. He has had over 200 papers and articles published, plus editing fi ve books on ocean-related subjects. Over the past 40 years, his lecturing activities have taken him to 60 nations where he has given more than 1,500 lectures, TV and radio
appearances.

Doug Woodring
Co-Founder/Project Director, Project Kaisei

Doug was born in California, but has worked in Asia for over 17 years. He is an environmental and technology entrepreneur, as well as a water sports enthusiast. Prior to working with startups, he created a framework for a global environmental technology fund at Merrill Lynch in 1998. He is currently working with a variety of renewable energy technologies, including microwind, wave, and for buildings, living vertical green walls. He is the chairman of the Environmental Committee at the American Chamber in Hong Kong, organizer of two open water swim races, and well connected throughout the region in the areas of the environment and new media technologies. He has a BA from UC Berkeley, an MA in Environmental Economics from Johns Hopkins (SAIS), and an MBA from Wharton.

Wendy Watson-Wright, Ph.D.
Assistant Director General and Executive Secretary,
UNESCO Intergovernmental Oceanographic Commission

Wendy Watson-Wright assumed the position of Assistant Director General and Executive Secretary of the United Nations Educational Scientific and Cultural Organization - Intergovernmental Oceanographic Commission (IOC-UNESCO) in January, 2010. Established in 1960 and headquartered in Paris, IOC-UNESCO's mandate is to promote international cooperation and coordinate programmes in marine research, services, observation systems, hazard mitigation and capacity development in order to learn more and better manage the nature and resources of the oceans and coastal areas.

Prior to assuming this post, Wendy spent the greater part of her career in senior positions within Fisheries and Oceans Canada, the lead federal agency for oceans policy and management. Most recently, from 2001 to 2009, she was Assistant Deputy Minister, Science, where she oversaw the science undertaken in the department's 15 institutes across the country

in diverse research areas which included oceanography, hydrography, fisheries, aquaculture, and aquatic ecology, toxicology and biodiversity. She also spent five years as the Director of Canada's oldest marine research institute, the St. Andrews Biological Station, in St. Andrews, New Brunswick. Wendy holds a Ph.D. from Dalhousie University in Halifax, Nova Scotia.

Received(Date): Thu, 24 Jun 2010 14:35:54 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: Gulf of Mexico Update from June 23

Gulf of Mexico Oil Spill Response Update

06/23/2010

Highlights

BP Formation of Gulf Coast Restoration Organization

On June 22, Bob Dudley was appointed President and CEO of the Gulf Coast Restoration Organization. Having grown up in Mississippi, Bob has a deep appreciation and affinity for the Gulf Coast, and believes deeply in BP's commitment to restore the region.

This new organization will deal with all aspects of the response and ensure BP fulfills our promises to the people of the Gulf Coast, and work to restore the environment. This will include:

ξ Executing our ongoing clean-up operations, and all associated remediation activities;

ξ Coordinating with government officials, including the National Incident Commander, Admiral Thad Allen, the Governors and local officials from the Gulf States, to meet our commitments as effectively and efficiently as possible;

ξ Keeping the public informed;

ξ Implementing the $20 billion escrow account established to assure we meet our obligations through the claims process; and

ξ Understanding the impact of the spill on the environment.

BP's Gulf States response activities, centered in the Unified Command with the Coast Guard in New Orleans, will now report to Bob.

The establishment of this new organization in no way limits the resources of BP that are available to meet our responsibilities to clean up the spill and restore the Gulf.

- 16,668 barrels of oil captured by the LMRP Cap on June 22.

- 10,429 barrels of oil captured and flared by the Q4000 drilling platform on June 22.

- More than $123 million in claims paid as of June 23, an increase of $5 million in 24 hours – see State Summaries.

- BP to donate proceeds from the sale of oil collected through riser systems to the National Fish and Wildlife Foundation, including $5 million in immediate funding to help build programs to benefit wildlife affected along the Gulf.

Offshore – Sea Floor

Containment Recovery

- Lower Marine Riser Package (LMRP) Cap – 16,668 barrels of oil were captured through the LMRP cap during the past 24-hour period. Total recovery from the LMRP Cap, and earlier-deployed riser insertion tube, is 285,678 barrels to date. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared with 35.8 million cubic feet burned on June 22.

  - *On the morning of June 23, liquids were observed in a diverter valve on the Discoverer Enterprise that indicated the formation of hydrates in the LMRP cap system. As a precautionary measure, the LMRP cap was disconnected from the blowout preventer and has been moved away to ensure safety of operations and to allow for analysis of the unexpected release of liquids. Additional capture of oil and gas through the LMRP cap has been temporarily suspended until such time that the cap can be re-installed.*

- Near Term Containment: Q4000 Direct Connect – This containment system, which is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel, flared 10,429 barrels of oil and 18.6 million cubic feet of gas on June 22. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Total oil disposed of through Q4000 to date is 62,259 barrels.

ξ Longer Term Containment: Permanent Riser Systems – BP is bringing in two additional ships that will be connected to "permanent riser systems." These systems will be capable of quick disconnect/reconnect in the event of a hurricane. The ships are expected to be at staging areas this week. The first riser has been fabricated and is being installed. The second riser is being fabricated. More information can be found under "Technical Update" on BP's website at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033572&contentId=7061710

Technical Update slides (dated June 18th): http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/Technical_briefing_061810.pdf

-

Dispersant injection on the sea floor – dispersant use at the subsea leak source continues, pursuant to EPA-agreed protocol. Approximately 10,046 gallons were applied on June 22.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

ξ The first relief well (work being performed by the *Development Driller III*) is at approximately 16,275 feet below sea level. Drilling began on May 2.

ξ The second relief well (work being performed by *Development Driller II*) is at approximately 10,000 feet below sea level. Drilling began on May 16.

Offshore – Surface Response

Skimming Vessels – 433 skimmers designed to separate oil from water are deployed across the Gulf. 8,828 barrels of oil-water mix were recovered and treated on June 22, bringing the total to 605,665 barrels of oil-water mix. Most surface operations were suspended yesterday due to weather.

Surface Dispersant – 2,008 gallons of surface dispersant were applied on June 22.

Most surface operations were suspended yesterday due to weather.

In-Situ Burning – 0 additional burns were conducted in the last 24-hour period. 238,950 total barrels are estimated to have been consumed through burns. Most surface operations were suspended yesterday due to weather.

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

Onshore – Shoreline Protection and Funding

Donation to National Fish and Wildlife Foundation – On June 22, BP announced it will donate the net revenue it receives from the sale of oil recovered from the MC252 spill to the National Fish and Wildlife Foundation (NFWF). NFWF, whose mission is to preserve and restore America's native wildlife species and habitats, will direct this money to projects that bring the greatest benefit to the wildlife of the affected Gulf Coast States. BP will provide $5 million to NFWF immediately, to ensure that their work can begin even as initial oil collections from the Discoverer Enterprise enter the refining process. More information can be found at http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063047

Boom Update – More than 2.7 million feet of containment boom are deployed or assigned across the Gulf with 976,000 feet in staging areas. Nearly 1.1 million feet of additional containment boom is on order. 4.1 million feet of sorbent boom is deployed with 2 million feet in staging areas.

Alabama

- Containment Boom – 550,700 feet deployed and 106,800 feet staged.
- Activated Vessels – 374 official response vessels, 895 Vessels of Opportunity, 75 skimmers, 86 barges.
- Shoreline Impacts – More than 2,000 people working on clean up at Orange Beach. No new oiling reported.

Florida

- Containment Boom – 354,500 feet deployed and 189,400 feet staged. 19,100 feet deployed yesterday.
- Activated Vessels – 216 official response vessels, 397 Vessels of Opportunity, 108 skimmers, 25 barges.
- Shoreline Impacts – More than 2,800 people working to clean up oiling in Escambia, Okaloosa, Walton and Bay counties. New oiling from Perdido Key to Johnson Beach and at Mexico Beach.

Louisiana

- Containment Boom – 1,468,326 feet deployed or assigned. 400,138 feet staged.

- Activated Vessels – 1,520 official response vessels, 679 Vessels of Opportunity, 150 skimmers, 407 barges.

- Shoreline Impacts – More than 1,800 people are working to clean up oil at locations in St. Bernard, Plaquemines, Jefferson, Lafourche and Terrebonne parishes. Efforts focused on Fourchon Beach, Grand Isle, Grand Terre, and Barataria Bay. No new oiling reported.

Mississippi

- Containment Boom – 379,150 feet deployed. 97,300 feet staged.

- Activated Vessels – 326 official response vessels, 812 Vessels of Opportunity, 84 skimmers, 84 barges.

- Shoreline Impacts – More than 540 people working on cleanup of light oil and tarballs at Horn Island, Petit Bois Island and Grand Bay. No new oiling reported.

Volunteers and Training – 27,469 volunteers were registered to support the effort as of June 22. Information about training can be found at www.deepwaterhorizonresponse.com under "volunteers."

Claims

$20 billion Claims Fund –Last week, BP announced it will establish an independent claims facility to be administered by Ken Feinberg. BP remains committed to making sure that everyone who has lost income as a result of the oil spill is compensated. BP is working closely with Mr. Feinberg to establish processes moving forward and to ensure there is no lapse in payments during whatever transition may be necessary.

More than $118 million in claims paid - BP has paid more than $123 million to residents along the Gulf Coast for claims filed as a result of the oil spill in the Gulf of Mexico. BP has issued more than 38,500 checks in response to about 91,000 claims to date. A 1,000-member claim team is working around the clock to receive and process claims. No claims have been denied and no claims are more than 30 days old.

Filing Claims / Claims Offices – 33 Claims Offices are open across the Gulf Coast to provide locations where people can go to file or discuss claims – link to Claims Office locations: http://www.bp.com/genericarticle.do?categoryId=9033791&contentId=7062871. There are 145 operators answering phones, and 731 claims adjusters staffing the offices.The contact number for claims is (800) 440-0858. In person claims can be filed at office locations listed below. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345

State-by-State Claims Summary as of June 23

Alabama Counties	Claims Paid
Mobile	$14,447,065
Baldwin	$6,724,851
Monroe	$121,920
Montgomery	$72,798
Covington	$62,500
Jefferson	$53,421
Clarke	$52,475
Madison	$40,991
Escambia	$37,686
Shelby	$32,900
Tuscaloosa	$31,948
Marengo	$31,400
Wilcox	$27,000
Walker	$25,000
Dale	$23,424
Greene	$23,170
Washington	$21,958
Chilton	$20,000
Etowah	$14,945
Saint Clair	$13,515
Other Counties	$459,853
Alabama Total	$22,338,821

Florida Counties	Claims Paid

Escambia	$3,449,145
Franklin	$3,293,486
Okaloosa	$3,031,121
Bay	$2,468,443
Santa Rosa	$1,646,364
Wakulla	$676,602
Gulf	$520,721
Walton	$432,083
Orange	$234,610
Duval	$132,690
Pasco	$126,757
Hillsborough	$76,126
Pinellas	$67,447
Leon	$64,969
Liberty	$56,420
Washington	$42,500
Taylor	$29,500
Collier	$25,300
Gadsden	$24,350
Lee	$22,500
Jackson	$21,938
Monroe	$21,352
Calhoun	$21,075
Holmes	$20,000
Dixie	$18,345
Other Counties	$356,516
Florida Total	$16,880,360

Louisiana Parishes	Claims Paid
Terrebonne	$12,441,888
Jefferson	$12,227,016
Plaquemines	$11,877,366
Lafourche	$7,478,067
Saint Bernard	$5,001,719
Orleans	$3,283,392
Saint Tammany	$3,076,470
Vermilion	$1,953,910
Calcasieu	$1,501,496
Saint Charles	$1,434,019
Iberia	$1,096,524
Saint Mary	$1,071,333
Cameron	$717,100
Lafayette	$568,498
Tangipahoa	$563,302
East Baton Rouge	$362,076
Livingston	$268,236

St John the Baptist	$180,410
Washington	$136,900
Assumption	$124,000
Saint Martin	$119,300
Ascension	$85,625
Jefferson Davis	$83,500
Saint Landry	$80,434
Saint James	$71,550
Beauregard	$63,000
Pointe Coupee	$52,400
Avoyelles	$31,800
Acadia	$30,350
Ouachita	$30,000
Rapides	$29,590
West Baton Rouge	$28,000
Concordia	$25,000
Caddo	$20,773
Allen	$15,000
Other Parishes	$988,064
Louisiana Total	$67,118,107

Mississippi Counties	Claims Paid
Harrison	$6,512,799
Jackson	$3,161,306
Hancock	$2,079,610
Pearl River	$215,470
Stone	$193,364
George	$128,737
Lamar	$104,040
Pike	$36,800
Forrest	$30,000
Marion	$25,000
Lawrence	$23,500
Lincoln	$15,000
Madison	$14,300
Jones	$13,385
Clarke	$12,500
Hinds	$12,000
Neshoba	$11,000
Clay	$10,000
Covington	$10,000
Webster	$10,000
Other Counties	$304,498
Mississippi Total	$12,923,309

Texas	$2,068,175
Georgia	$398,180
Other States	$1,324,083
Total Claims Paid	$123,051,036

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	

Karen St John

BP America

Sr. Director, Regulatory Affairs

[redacted]
B6 Privacy

Received(Date): Mon, 28 Jun 2010 11:30:08 -0400
From: Brian Pawlak <Brian.T.Pawlak@noaa.gov>
Subject: June 28th 0800 Phone Call: Action Items
To: John Oliver <John.Oliver@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>, John Stein <John.E.Stein@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, Lauren B Lugo <Lauren.B.Lugo@noaa.gov>
Brian_T_Pawlak.vcf

John et al.,

This mornings phone call, Kennedy asked for an update tomorrow on "Where we are with dispersant testing, knowing that we are doing some work in Galveston and NWFSC how is that going and what are we seeing". Dave noted that if tomorrow's update notes that we are still working out the process that is fine, but we should state where we are with that.

--
Brian Pawlak
Deputy Director
NOAA Fisheries Service
Office of Habitat Conservation
301-713-2325 (167)
301-713-1043 (Fax)

Brian Pawlak

Deputy Director
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Version
2.1

Received(Date): Wed, 30 Jun 2010 18:15:51 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: EPA Dispersant report
To: DWH leadership <DWH.Leadership@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Cc: Beth Lumsden <Beth.Lumsden@noaa.gov>
Shelby_Walker.vcf

Good afternoon,
Please find below the link to the EPA page discussing the dispersant report released today, along with the press release and statement.
http://www.epa.gov/bpspill/dispersants-testing.html
I've also attached the reports here.
Regards,
Shelby

Comparative Toxicity of Eight Oil Dispersant Products on Two Gulf of Mexico Aquatic Test Species

U.S. Environmental Protection Agency
Office of Research and Development

U.S.EPA/ORD Contributors

National Health and Environmental Effects Research Laboratory
Michael J. Hemmer, Mace G. Barron and Richard M. Greene

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Document ID: 0.7.19.1724

Analysis of Eight Oil Spill Dispersants Using *In Vitro* Tests for Endocrine and Other Biological Activity

June 30, 2010

U.S. Environmental Protection Agency
Office of Research and Development

ExecutiveSummary

The U.S. Environmental Protection Agency's Office of Research and Development was asked to evaluate the cytotoxicity and potential for interaction with the androgen and estrogen receptors (AR, ER) of eight oil spill dispersants being used, or could be considered for use, in the Gulf of Mexico. These are Corexit 9500 (the current product being used), DISPERSIT SPC 1000, JD 2000, Nokomis 3-F4, Nokomis 3-AA, SAF-RON GOLD, Sea Brat #4, and ZI-400. To address this request, ORD staff and outside collaborators carried out a number of separate studies that were run using *in vitro* (cell-based) assays. A total of 8 cytotoxicity assays, 3 AR agonist assays, 1 AR antagonist assay and 4 ER agonist assays were run on the 8 dispersants, plus reference compounds. Tests were run across a wide range of dispersant concentrations (0.001 to 10,000 parts per million, or ppm). Two dispersants showed a weak signal in one of the four ER assays, but integrating over all of the ER and AR results these data do not indicate that any of the eight dispersants display biologically significant endocrine activity via the androgen or estrogen signaling pathways. All of the dispersants showed cytotoxicity in at least one cell type at concentrations between 10 and 1000 ppm. Both JD 2000 and SAF-RON GOLD tend to be less cytotoxic than the other dispersants. Likewise, DISPERSIT SPC 1000 tends to be more cytotoxic than the other dispersants in the cell-based assays.

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Document ID: 0.7.19.1724

Comparative Toxicity of Eight Oil Dispersant Products on Two Gulf of Mexico Aquatic Test Species

U.S. Environmental Protection Agency
Office of Research and Development

U.S.EPA/ORD Contributors

National Health and Environmental Effects Research Laboratory
Michael J. Hemmer, Mace G. Barron and Richard M. Greene

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Document ID: 0.7.19.1724.1

1. Introduction

Large quantities of Louisiana sweet crude oil have been released into the Gulf of Mexico since the explosion of the Deepwater Horizon oil exploration platform on April 20, 2010. As part of the integrated response effort to mitigate the impact of the oil in the environment, the decision was made to use dispersants listed on the U.S. Environmental Protection Agency's (EPA) National Contingency Plan (NCP) Product Schedule (EPA 2010a). Dispersants are being applied offshore on the surface as well as underwater at the source of the leak. The EPA conducted independent studies to assess the relative acute toxicity of eight dispersants on the NCP Product Schedule.

This report summarizes results of the first phase of testing obtained from acute toxicity tests conducted with eight oil dispersants using two Gulf of Mexico aquatic species: (1) the mysid shrimp, *Americamysis bahia*, an aquatic invertebrate, and (2) the inland silverside, *Menidia beryllina*, a small estuarine fish. These species are standard test organisms used in a variety of EPA toxicity test methods. The eight dispersants tested were Corexit 9500A, Dispersit SPC1000, JD-2000, Nokomis 3-AA, Nokomis 3-F4, Saf-Ron Gold, Sea Brat #4 and ZI-400. The tests were conducted using an established contract testing laboratory and in compliance with the Good Laboratory Practice regulations as provided in EPA 40CFR160 (USEPA, 40CFR Part 160). The approach described herein utilized consistent test methodologies within a single laboratory which provided a means to assess acute toxicity estimates across dispersants and independently evaluate the NCP Product schedule toxicity information. The next phases of this study will examine the acute toxicity of Louisiana sweet crude oil and dispersant-sweet crude oil mixtures on mysids and *Menidia* – the results will be reported separately at a later date.

2. Test Methods

The acute toxicity test methods followed, with slight modification, the requirements specified in U.S. Environmental Protection Agency's 62 FR 15576, Appendix C of Part 300 – *Swirling Flask Dispersant Effectiveness Test, Revised Standard Dispersant Toxicity Test and Bioremediation Agent Effectiveness Test* (USEPA, 1997) and the EPA Test Method 821-R-02-012, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA, 2002). Specific modifications are shown in Appendix A.

Document ID: 0.7.19.1724.1

The exposure concentration range for each dispersant was chosen to bracket the estimated median lethal concentration (LC50) values reported in the NCP Product Schedule. The LC50 is defined as the concentration of a substance causing mortality in 50% of test organisms for a specified time interval, in this case, 48-hours for the mysid test and 96-hours for the silverside test. The commercially available statistical software package, CETIS® was used for the calculation of LC50 values using an automated decision tree adapted from EPA for selection of the appropriate statistical method (CETIS, 2009; USEPA, 1994). Point estimate procedures used to calculate LC50 values included linear regression methods, the non-parametric Spearman-Karber method and the binomial method. A qualitative comparison was made between LC50 values for the eight dispersants tested as well as with those available in the NCP Product Schedule. Note that the reproducibility of static acute tests among laboratories using the same species/toxicant combination has been reported to generally fall within a factor of 3.5 among laboratories when using nominal concentrations (unmeasured treatment concentrations) for both freshwater and marine species (USEPA, 1981). Given the use of whole organisms in these tests, some variation in response attributable to differences in parameters such as culture and acclimation conditions, stock populations or variable water quality is expected and acceptable.

3. Results - Mysid Toxicity Tests

3.1 Mysid Testing Schedule

Following the first round of eight acute toxicity tests, dispersant LC50s were greater than the highest concentration tested for four of the eight dispersants. Definitive acute toxicity tests were repeated using higher test concentrations for JD-2000, Saf-Ron Gold, Sea Brat #4 and ZI-400.

3.2 Mysid Test Acceptability

Control performance (without dispersant) met all criteria for an acceptable exposure in each test (≥90% survival). All water quality parameters were within ranges specified in the protocol with the exception of dissolved oxygen for the high test concentration (56 ppm) in the Nokomis 3-AA exposure at 24 hours, which was measured at 56% of saturation. As dissolved oxygen levels were >60% at other time points in the test and the toxicity was clearly dose

Document ID: 0.7.19.1724.1

related, the departure observed in the 56 ppm concentration at 24 hours was not considered to have had a negative impact on the exposure with Nokomis 3-AA.

3.3 Mysid Toxicity Results

In the first series of acute toxicity tests, LC50 values and 95% confidence intervals were successfully determined for Corexit 9500A, Dispersit SPC 1000, Nokomis 3-AA and Nokomis 3-F4 and in the second series of acute tests, LC50s were calculated for JD-2000, Saf-Ron Gold, Sea Brat #4 and ZI400. Test results are summarized in Table 1.

The LC50 values for dispersant acute tests with mysids ranged from 12 ppm for Dispersit SPC1000 to 788 ppm for JD-200 (Table 1). EPA uses a five-step scale of toxicity categories to classify pesticides based on their acute toxicity to aquatic organisms: LC50 values of >100 ppm are considered practically nontoxic; >10 to 100 ppm as slightly toxic; > 1 to 10 ppm as moderately toxic; LC50s of 0.1 to 1 ppm as highly toxic and LC50s < 0.1 ppm as very highly toxic (USEPA, 2010b). Using this toxicity classification, Corexit 9500A, Dispersit SPC1000, Nokomis-3AA, Nokomis 3-F4, Sea Brat #4 and ZI-400 would be classified as slightly toxic whereas JD-2000 and Saf-Ron Gold would be classified as practically non-toxic to mysids (Table 1).

Based on comparison of LC50 values and 95% confidence intervals across the eight dispersants tested in the present study, the rank order toxicity (most to least toxic) of the dispersants to mysids was: (1) Dispersit SPC1000, (2) Nokomis 3-AA, (3) Nokomis 3-F4, Corexit 9500A, (4) ZI-400, Sea Brat #4, (5) Saf-Ron Gold, and (6) JD-2000.

Factor ratios were used to compare LC50s derived for the same species/dispersant combination from different laboratories. The factor ratios between LC50 values determined in this study and NCP reported LC50 values were calculated as a ratio by dividing the higher of the two LC50 values by the lower LC50 value for each of the eight dispersants, respectively (Table 1). As an example, using information from Table 1, the factor ratio for Corexit 9500A was determined as 42/32.2 = 1.3. The factor ratios calculated for Corexit 9500A, Dispersit SPC1000, Nokomis 3-AA, Nokomis 3-F4, Saf-Ron Gold and ZI-400 were less than or equal to 2.6 which

Document ID: 0.7.19.1724.1

was considered within normal inter-laboratory variability (USEPA, 1981). Results for JD-2000 and Sea Brat #4 showed lower toxicities (i.e., higher LC50s) with factor ratios of 8.7 and 4.6, respectively, compared to their reported NCP LC50 values.

3.4 Mysid Reference Toxicant Test

A 48-hr acute toxicity test was conducted with the standard reference toxicant, sodium dodecyl sulfate (SDS), to evaluate the relative sensitivity of the mysids used in the series of dispersant toxicity tests. The mysids tested with SDS were from the same population and age range used for dispersant testing. The 48-hr LC50 and 95% confidence interval calculated for SDS was 23 ppm [19-26 ppm] which was consistent with the reported NCP LC50 values for SDS.

4. Results - *Menidia* Toxicity Tests

4.1 *Menidia* Testing Schedule

Following the first round of acute toxicity tests, dispersant LC50s were determined to be greater than the highest concentration tested for two of the eight dispersants. Definitive acute toxicity tests were repeated using higher test concentrations for Corexit 9500A and JD-2000.

4.2 *Menidia* Test Acceptability

Control performance met all criteria for an acceptable exposure in each of the eight dispersant tests conducted (≥ 90%). All water quality parameters were within ranges specified in the test protocol for *Menidia beryllina.*

4.3 *Menidia* Toxicity Results

In the first series of acute tests, LC50 values and 95% confidence intervals were successfully determined for Dispersit SPC 1000, Nokomis 3-AA, Nokomis 3-F4, Saf-Ron Gold, Sea Brat #4 and ZI-400. In the second series of repeat acute tests, an LC50 was calculated for Corexit 9500A but not for the dispersant JD-2000. These data are summarized in Table 2. In the case of JD-2000, 20% mortality was observed in the highest concentration tested of 5,600 ppm, followed by no mortality observed in the next two highest exposure concentrations which indicated an LC50 > 5,500 ppm. At the highest concentration, solid material was observed at the

Document ID: 0.7.19.1724.1

bottom of the replicate test vessels suggesting saturation of the dispersant may have been achieved.

The LC50 values for dispersant acute toxicity tests with *Menidia* ranged from 2.9 ppm for Dispersit SPC1000 to 130 ppm for Corexit 9500A; the LC50 for JD 2000 exceeded the highest test concentration of 5,600 ppm. Using the EPA toxicity classification, Dispersit SPC1000 would be considered moderately toxic whereas Nokomis-3AA, Nokomis 3-F4, Saf-Ron Gold, Sea Brat #4 and ZI-400 would be classified as slightly toxic, and Corexit 9500A and JD-2000 as practically non-toxic to inland silversides.

Based on comparison of LC50 values and 95% confidence intervals, the rank order toxicity (most to least toxic) of the dispersants to *Menidia* were: (1) Disersit SPC1000, (2) Nokomis 3-F4, Nokomis 3-AA, ZI-400, (3) Saf-Ron Gold, (4) Sea Brat #4, (5) Corexit 9500A, and (6) JD-2000.

The factor ratios calculated for Dispersit SPC1000, Nokomis 3-AA, Nokomis 3-F4, Saf-Ron Gold, Sea Brat #4 and ZI-400 were less than or equal to 1.83 which was considered within normal inter-laboratory variability. The factor ratios of 5.2 and 13.8 for Corexit 9500A and JD-2000 indicate that the LC50 values reported for Corexit 9500A and JD-200 in the NCP Product Schedules would be considered different (i.e., lower) from the LC50 values determined in the present study.

Possible explanations for the 13.8 fold difference between the reported NCP LC50 for JD-2000 and the highest exposure concentration tested in the present study may be attributable to batch-to-batch variability in the manufacturing process, instability of the stored product over time, or a change in the product formulation.

4.4 *Menidia* Reference Toxicant Test

A 96-hr acute toxicity test was conducted with the reference toxicant SDS to evaluate the relative sensitivity of the *Menidia* used in the series of dispersant toxicity tests. The *Menidia* tested with SDS were from the same population and age range used for dispersant testing. The

Document ID: 0.7.19.1724.1

96-hr LC50 and 95% confidence interval calculated for SDS was 9.5 ppm [8.7-10 ppm] which was consistent with the reported NCP LC50 values for SDS. It should be noted that during the last 24 hours of the test, the temperature dropped to 22°C, which was 2 degrees below the acceptable criteria and thus invalidated the test. However, there was no difference in mortality counts between the 72-hour and the 96-hour observations suggesting the temperature change had no negative impact on the test or the final calculated LC50.

5.0 Conclusions

The present study provided an independent, quantitative assessment of acute toxicities of eight dispersants to two aquatic species inhabiting Gulf of Mexico waters. Toxicity was determined as the LC50 derived from standard short term acute tests using standard test species, specifically the Gulf mysid, *Americamysis bahia*, and the inland silverside, *Menidia beryllina.* In general, the toxicity values (i.e., LC50s) for mysids ranged over nearly two orders of magnitude and for *Menidia* over three orders of magnitude. Given the expected range of inter-laboratory variability, the results of the present study were consistent with test results reported in the NCP Product Schedule, with the exception of two dispersants for each test species which yielded higher LC50s (i.e., lower toxicity) than reported in the NCP. The rank order toxicity of the eight dispersants was generally similar to the information provided in the NCP Product Schedule. For both test species, Dispersit SPC1000 was the most toxic and JD-2000 the least toxic. The other six dispersants varied in relative toxicity to mysids and *Menidia*, with LC50 values ranging from 20 to 130 ppm. Overall, the dispersants were classified as being slightly toxic to practically non-toxic to both test species, with the exception that Dispersit SPC1000 would be considered moderately toxic to *Menidia.* Corexit 9500A, the dispersant currently applied offshore at the surface and underwater, falls into the slightly toxic category for mysids and the practically non toxic category for *Menidia.*

Short-term acute toxicity tests using consistent methodologies and test organisms provide important and fundamental information on oil spill dispersants and other toxicants. The next phase of testing will examine the acute toxicity of Louisiana sweet crude oil and dispersant-sweet crude oil mixtures on mysids and *Menidia.* The comparative toxicity analysis of dispersants, sweet crude oil and dispersant-sweet crude oil mixtures on standard aquatic test

Document ID: 0.7.19.1724.1

species will provide improved understanding of potential toxicological effects associated with this oil spill.

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Document ID: 0.7.19.1724.1

Table 1. Results of mysid 48-hr static acute toxicity tests with eight dispersants. LC50 values (ppm), 95% confidence intervals [in brackets] and the toxicity classification of dispersant LC50s derived in the present study. NCP Product Schedule listing of dispersant LC50s and 95% confidence intervals [in brackets] shown in right column for comparison.

Dispersant	**This Study LC50 (ppm) [95% CI]**	**Toxicity Category[1]**	**NCP Product Schedule LC50 (ppm) [95% CI][d]**
Dispersit SPC 1000	12 [10-14][a]	Slightly Toxic	16.6 [14.1-19.6]
Nokomis 3-AA	30 [27-34][b]	Slightly Toxic	20.2 [17.4-22.8]
Corexit 9500A	42 [38-47][c]	Slightly Toxic	32.2 [26.5-39.2]
Nokomis 3-F4	42 [38-47][c]	Slightly Toxic	32.2 [28.4-36.5]
ZI -400	55 [50-61][b]	Slightly Toxic	21.0 [17.9-24.5]
Sea Brat #4	65 [57-74][a]	Slightly Toxic	14.0 [±10.4]
Saf-Ron Gold	118 [104-133][b]	Practically Non-Toxic	63.0[e] [52.9-75.1]
JD-2000	788 [627-946][a]	Practically Non-Toxic	90.5[e] [76.1-108]

[1]Toxicity classification per USEPA 2010 applied to results of present study
[a]Estimated by linear regression method
[b]Estimated by Spearman-Karber method
[c]Estimated by binomial method
[d]Values as reported in NCP Product Schedule documentation by manufacturer
[e]Classified as slightly toxic according to values provided in NCP Product Schedule

Document ID: 0.7.19.1724.1

Table 2. Results of *Menidia* 96-hr static acute toxicity tests with eight dispersants. LC50 values (ppm), 95% confidence intervals [in brackets] and the toxicity classification of dispersant LC50s derived in the present study. NCP Product Schedule listing of dispersant LC50s and 95% confidence intervals [in brackets] shown in right column for comparison.

Dispersant	**This Study LC50 (ppm) [95% CI]**	**Toxicity Category[1]**	**NCP Product Schedule LC50 (ppm) [95% CI][d]**
Dispersit SPC 1000	2.9 [2.5-3.2][b]	Moderately Toxic	3.5 [3.1-4.0]
Nokomis 3-F4	19 [16-21][b]	Slightly Toxic	29.8 [24.0-35.4]
Nokomis 3-AA	19 [17-21][b]	Slightly Toxic	34.2 [29.2-37.95]
ZI -400	21 [18-23][b]	Slightly Toxic	31.8 [28.7-35.1]
Saf-Ron Gold	44 [41-47][b]	Slightly Toxic	29.4 [25.2-34.3]
Sea Brat #4	55 [49-62][b]	Slightly Toxic	30.0 [$\pm$16.2]
Corexit 9500A	130 [122-138][b]	Practically Non-Toxic	25.2[e] [13.6-46.6]
JD-2000	>5,600	Practically Non-Toxic	407 [330-501]

[1]Toxicity classification per USEPA 2010 applied to results of present study
[b]Estimated by Spearman-Karber method
[d]Values as reported in NCP Product Schedule documentation by manufacturer
[e]Classified as slightly toxic according to values provided in NCP Product Schedule

Document ID: 0.7.19.1724.1

Appendix A

Test parameter	**Specified in SubPart J Appendix C (USEPA 1997)**	**Method used in present study, and specified in USEPA 2002**
Photoperiod and light intensity	*24 hr light *higher intensity light	*16 hr light/8 hr dark *Moderate intensity light
Glassware cleaning	*Hexane immersion	*Acetone rinse
Reference toxicant test	*Two species simultaneously	*Staggered tests
Rangefinder tests	*Prior to definitive test	*Use NCP data to define test concentrations
Mysid age	*5-7 day old larvae	*1 to 6 day old; all within 24 hr same age
Toxicant stock solution preparation for mysid test	*Blender 10,000 rpm *gas tight syringes	*Top stirring at 70% vortex *graduated glass pipettes
Mysid test solution mixing	*no specification	*short term gentle mixing following stock addition
Mysid additions to test chambers	*no specification	*impartial, two at a time
Menidia age	*7 day old larvae	*9-14 day old, all within 24 hr same age
Menidia test solution mixing	*test jars on shaker platform	*same procedure as for mysids
Dilution Water	*Natural Seawater Prefered	*Salinity adjusted, 20 μm filtered natural seawater

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Analysis of Eight Oil Spill Dispersants Using *In Vitro* Tests for Endocrine and Other Biological Activity

June 30, 2010

U.S. Environmental Protection Agency
Office of Research and Development

Executive Summary

The U.S. Environmental Protection Agency's Office of Research and Development was asked to evaluate the cytotoxicity and potential for interaction with the androgen and estrogen receptors (AR, ER) of eight oil spill dispersants being used, or could be considered for use, in the Gulf of Mexico. These are Corexit 9500 (the current product being used), DISPERSIT SPC 1000, JD 2000, Nokomis 3-F4, Nokomis 3-AA, SAF-RON GOLD, Sea Brat #4, and ZI-400. To address this request, ORD staff and outside collaborators carried out a number of separate studies that were run using *in vitro* (cell-based) assays. A total of 8 cytotoxicity assays, 3 AR agonist assays, 1 AR antagonist assay and 4 ER agonist assays were run on the 8 dispersants, plus reference compounds. Tests were run across a wide range of dispersant concentrations (0.001 to 10,000 parts per million, or ppm). Two dispersants showed a weak signal in one of the four ER assays, but integrating over all of the ER and AR results these data do not indicate that any of the eight dispersants display biologically significant endocrine activity via the androgen or estrogen signaling pathways. All of the dispersants showed cytotoxicity in at least one cell type at concentrations between 10 and 1000 ppm. Both JD 2000 and SAF-RON GOLD tend to be less cytotoxic than the other dispersants. Likewise, DISPERSIT SPC 1000 tends to be more cytotoxic than the other dispersants in the cell-based assays.

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

Document ID: 0.7.19.1724.2

Contents

Executive Summary 1
Contributors 3
Introduction / Background 4
Project Goals 6
Study Summary: 6
Chemicals 7
Results 9
Androgen Receptor Agonist Activity 9
AR Agonist Assay 1 - Multiplexed reporter transcription unit (RTU) assay 9
AR Agonist Assay 2 - AR beta-lactamase Assay 10
AR Agonist Assay 3 - MDA-kb2 Androgen-responsive transcriptional activation assay 11
AR Agonist Assay 4 - CV-1 transient transcription assay 14
Androgen Receptor Antagonist Activity 16
AR Antagonist Assay 1 - MDA-kb2 Androgen-responsive transcriptional activation assay in antagonist mode 16
Estrogen Receptor Agonist Activity 20
ER Agonist Assay 1 - Multiplexed reporter transcription unit (RTU) *trans* assay 20
ER Agonist Assay 2 - Multiplexed reporter transcription unit (RTU) *cis* assay 24
ER Agonist Assay 3 – ER-alpha beta-lactamase Assay 24
ER Agonist Assay 4 - T47D-KBluc estrogen-responsive transcriptional activation assay 25
Cytotoxicity 29
Cytotoxicity Assay 1 –HepG2 Cells 29
Cytotoxicity Assay 2 –AR *bla* Cells 29
Cytotoxicity Assay 3 –ER *bla* Cells 30
Cytotoxicity Results (Assays 1-3) 30
Cytotoxicity Assays 4 THRU 9: measurements in T47D-KBluc, MDA-kb2, and CV-1 cells (MTT and CPE assessments) (5 independent assessments). 30
Cytotoxicity Results (Assays 4-9) 31
Cytotoxicity Summary 37
Other Molecular Targets 40
Conclusions 44
Supplementary Information 45
QA Summary 45
References 46

Document ID: 0.7.19.1724.2

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Introduction / Background

The Deepwater Horizon oil spill has led to the use of large amounts of dispersant as part of the integrated approach dealing with the oil spill. Given this fact, questions have arisen about the toxicity of the chemicals used as dispersants themselves. EPA's Office of Research and Development (ORD) was asked to carry out rapid studies to provide information on the potential for toxicity of eight commercially available dispersants. Because some of the dispersants reportedly include nonylphenol ethoxylates (NPEs) that can degrade to isomers of nonylphenol (NP), some of which are proven estrogenic compounds, the potential endocrine effects of the dispersants are of particular concern. For example, NPEs and NPs have been demonstrated to be endocrine disruptors in fish [1]. In response to the request ORD has undertaken a series of short-term *in vitro* studies to determine if any of the dispersants displayed estrogenic, androgenic or other endocrine activity.

ORD developed a strategy to address the questions of endocrine activity and relative toxicity as rapidly as possible. ORD scientists initiated several complementary studies of eight oil spill dispersants being used or considered for use in the Gulf. The issue was to provide some targeted information on the dispersants as quickly as possible. *In vitro* assays are well suited for that purpose. This work complements a study of whole animal toxicity in small fish and brine shrimp also being carried out by ORD. The results of that study are being simultaneously released with this report.

One set of studies used a set of mammalian *in vitro* reporter gene assays in estrogen-responsive and androgen-responsive cells [2, 3] run in-house at ORD laboratories in RTP, NC. Additional studies were conducted by two external labs (NIH Chemical Genomics Center [NCGC] and Attagene Inc.) to run mammalian *in vitro* reporter gene assays to measure androgen and estrogen-response activity. A panel of 74 assays against non-endocrine molecular targets was also included in the Attagene assays. The NCGC and Attagene assays are part of the EPA ToxCast program [4, 5]. All assays evaluated the eight dispersants Corexit® 9500, JD 2000™, DISPERSIT SPC 1000™, Sea Brat #4, Nokomis 3-AA, Nokomis 3-F4, ZI-400 and SAF-RON

Document ID: 0.7.19.1724.2

GOLD. The performance of the assays was characterized by simultaneously running positive and negative control chemicals. Quantitative cytotoxicity measurements were carried out on each of the cell types used. All data analyses and interpretation were carried out by ORD staff.

It is important to note that positive results *in vitro* only demonstrate that a chemical is a potential endocrine disruptor and that follow-up tests will likely be needed in order to refine or confirm the endocrine activity. For example, effects seen *in vitro* may not be expressed *in vivo*, so additional studies would need to be conducted to verify the *in vitro* results and determine if the potential activity was displayed in whole animals and the dosage levels required to affect organisms.

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Document ID: 0.7.19.1724.2

Project Goals

1. Determine if any of the eight dispersants displayed estrogenic, androgenic or antiandrogenic activity *in vitro* using a variety of well characterized *in vitro* cell-based assays that utilize different approaches for detecting endocrine driven gene expression changes
2. Determine the dispersant concentration that induced cytotoxicity in multiple cell lines and derive an aggregate measure of cytotoxicity that could be use to rank order the chemicals and to compare with *in vivo* toxicity data obtained in aquatic test species.

Study Summary:

One part of the project was carried out by ORD researchers in partnership with the NIH Chemical Genomics Center [NCGC] and Attagene Inc. Two high throughput assay sets were run on the dispersants, a collection of reference chemicals for ER and AR activity, plus nonylphenol compounds. In addition to assays for AR and ER, this phase of the project produced data on a battery of other transcription factor assays which are part of multiplexed panels including AR and ER assays. Cytotoxicity was evaluated in three cell lines over a range of concentrations.

The other phase of the study was carried out in-house by ORD researchers using multiple assays [2, 3] to measure interaction between the eight dispersants plus reference chemicals and ER or AR. In particular, this work evaluated the eight dispersants for estrogen agonist activity in an estrogen-responsive transcriptional activation assays (ER-TA), for androgen agonist activity in two androgen-responsive transcriptional activation assays (AR-TA), MDA-kb2 and CV-1 assays and for androgen antagonist activity in the MDA-kb2 assay in competition with 1 nM Dihydrotestosterone (DHT). Cytotoxicity was evaluated in each assay at every concentration by both a biochemical assay which assessed metabolic perturbation and by a visual assessment of cytopathic effect on cell viability and morphology.

Document ID: 0.7.19.1724.2

Chemicals

All assays evaluated eight commercially available oil spill dispersants that were obtained directly from the respective manufacturers. EPA chose these eight dispersants from the dispersants listed on the National Contingency Plan Product Schedule based on three criteria: 1) lower toxicity of the dispersant or of the dispersant when mixed with oil; 2) availability of sufficient quantities to respond to the Gulf spill; and 3) immediate availability of samples for testing. These included Corexit® 9500 (Nalco Inc., Sugarland TX), JD 2000™ (GlobeMark Resources Ltd., Atlanta, GA), DISPERSIT SPC 1000™ (U.S. Polychemical Corp., Chestnut Ridge, NY), Sea Brat #4 (Alabaster Corp., Pasadena, TX), Nokomis 3-AA (Mar-Len Supply, Inc., Hayward, CA), Nokomis 3-F4 (Mar-Len Supply, Inc., Hayward, CA), ZI-400 (Z.I. Chemicals, Los Angeles, CA) and SAF-RON GOLD (Sustainable Environmental Technologies, Inc., Mesa, AZ). All are liquid solutions. Further information on the dispersants, including the limited publicly available information on the composition of dispersants is given in **Appendix A.1**. The oil spill dispersants were tested *in vitro* at concentrations ranging from 0.01 to 1000 ppm in water (vol:vol).

The assays run by NCGC and Attagene included reference compounds recommended for validating ER /AR assays by ICCVAM (Interagency Coordination Committee on the Validation of Alternative Methods)[6] and the U.S. EPA[7]. A preliminary set of reference compounds was obtained from stocks at EPA facilities in RTP NC. Subsequently, additional samples were obtained from Sigma-Aldrich (St. Louis MO). Included in the reference chemicals are both straight chain and branched NP isomers and corresponding example NPEs. The reference chemicals are 17β-Trenbolone (10161-33-8), 17β-Estradiol (50-28-2), Atrazine (1912-24-9), Bisphenol A (80-05-7), Butylbenzyl phthalate (85-68-7), Dibutyl phthalate (84-74-2), Flutamide (13311-84-7), Linuron (330-55-2), 4–Nonylphenol (linear) (104-40-5), p,p' –DDE (72-55-9), p,p'- Methoxychlor (72-43-5), Procymidone (32809-16-8), Vinclozolin (50471-44-8), 2,4,5-T (93-76-5), Bicalutamide (90357-06-5), Cyproterone acetate (427-51-0), Genistein (446-72-0), 4-(tert-octyl), Phenol (140-66-9), 4-Hydroxytamoxifen (68392-35-8), 5α-androstan-17β-ol-3-one (521-18-6) and 4-Nonylphenol, (branched) (84852-15-3). The two nonylphenol ethoxylates are Tergitol NP-9 (127087-87-0) and Igepal CO-210 (68412-54-4). Reference chemicals (powder

Document ID: 0.7.19.1724.2

form) were solubilized in DMSO to a final concentration of 20 mM. Further information, including lot and batch are given in **Appendix A.2**.

In the in-house ORD assays, a 17β-Estradiol (E2; 50-28-2) dose response was included on every plate in the ER-TA assay as a positive control. 4-Nonylphenol (branched) (84852-15-3; Fluka) and 17α-Trenbolone (Osaka Hayashi Pure Chemical Industries Ltd., CAS no. 80657-17-6, purity 99.9%) were also tested in the estrogen mediated assays. A dihydrotestosterone (DHT; Sigma Chemical; CAS 55206-14-9) dose response was included as a positive control on every plate in the AR-TA assays. The potent androgen, 17α-Trenbolone, was also tested in the androgen agonist assays. Dosing solutions of dispersants and reference compounds were prepared on-site under observation of a Quality Assurance manager. The assays used in the NHEERL assays have been demonstrated [2, 8] to give appropriate responses to known estrogenic or androgenic compounds.

Document ID: 0.7.19.1724.2

Results

More detailed assay protocols and statistical analysis methods can be found in the Appendices, as well as a Quality Assurance (QA) Statement.

Androgen Receptor Agonist Activity

AR Agonist Assay 1 - Multiplexed reporter transcription unit (RTU) assay

Method Summary: This assay is part of a multiplexed reporter gene panel run by Attagene Inc. (RTP, NC), under contract to the U.S. EPA (Contract Number EP-W-07-049). This assay consists of 48 human transcription factor DNA binding sites transfected into the HepG2 human liver hepatoma cell line as previously described[9]. This *trans* assay employs a mammalian one-hybrid assay consisting of an additional 25 RTU library reporting the activity of nuclear receptor (NR) superfamily members. The human ligand-binding domain of each nuclear receptor was expressed as a chimera with the yeast GAL4 DNA-binding domain that activated in trans a 5XUAS-TATA promoter, which regulated the transcription of a reporter sequence unique to each NR RTU. To ensure the specificity of detection, each individual trans-RTU system including both receptor and reporter gene was separately transfected into suspended cells followed by pooling and plating of the transfected cells prior to screening. The *trans* assay evaluates changes in activities of exogenous, chimeric NR-Gal4 proteins. This particular assay evaluated transcription for the Androgen receptor, and uses the code ATG_AR_TRANS. Additional detail of the method is provided in the **Appendix B.1**. Concentration-response titration points for each compound were fitted as described in **Appendix C.** For this analysis, there were either 4 replicates in 16 concentrations, except for SAF-RON GOLD which was only tested in 2 replicates and 8 concentrations.

Results: No activity was seen for any of the dispersants

Document ID: 0.7.19.1724.2

AR Agonist Assay 2 - AR beta-lactamase Assay

Method Summary: This assay was run at the NIH Chemical Genomics Center (NCGC; Rockville, MD) in collaboration with EPA as part of the Tox21 collaboration[10]. A beta-lactamase reporter-gene cell-based assay [GeneBLAzer® AR-UAS-bla-GripTite™ assay developed by Invitrogen] was used to measure AR ligand signaling. AR-UAS-bla-GripTite™ HEK 293 cells (AR *bla* cells) were used with assay medium containing 10% dialyzed FBS, 0.1 mM NEAA and 1 mM sodium pyruvate. The assay was performed in clear bottom black Greiner 1536-well plates. R1881, a synthetic androgen agonist, was used as a positive control in the screen. Library compounds were measured for their ability to either stimulate or inhibit the reporter gene activity. Compounds were screened in a titration series in 1536-well format. The fluorescence intensity (405 nm excitation, 460/530 nm emission) was measured using an EnVision plate reader. Data was normalized relative to R1881 control (40 nM, 100%, for agonist mode and 10 nM, 0%, for antagonist mode), and DMSO only wells (basal, 0% for agonist mode and -100% for antagonist mode). Additional detail of the method is provided in the **Appendix B.2**. Concentration-response titration points for each compound were fitted as described in **Appendix C**. For this analysis, there were 8-10 replicates in 24 concentrations.

Results: The only dispersant that showed any activity in any of the AR assays was JD 2000, which was active in both the NCGC ER and AR agonist and antagonist assays in all runs with AC50 values ranging from 100-270 ppm (AR) and 82-120 ppm (ER). There was no apparent cytotoxicity in any of the cell line for JD 2000 (see results below). The EMax values for JD 2000 in all of these assays were significantly greater than the values for positive control chemicals, and in the antagonist assays, this dispersant looked like a “super-activator” rather than an antagonist. All of this data taken together indicates strongly that some non-specific activation is occurring that is independent of ER or AR. We have found previously that compounds identified as promiscuous “super-activators” in multiple beta-lactamase reporter gene assays with a narrow potency range (a <3-fold difference in potency is within the experimental variations of these assays) are mostly auto fluorescent (R Huang, unpublished data). Thus, the activity observed for JD 2000 is likely an artifact of the beta-lactamase assay format. Preliminary results from three additional beta-lactamase assays for non-steroid receptor targets all showed the JD 2000 “super-

Document ID: 0.7.19.1724.2

activation". Considering the totality of the data, we conclude that JD 2000 does not exhibit ER or AR transactivation activity. To further confirm that this JD 2000 activity is non-specific and not due to ER or AR activation, we are running several follow-up assays with NCGC: known antiestrogens and antiandrogens are being used to show that JD 2000 activity is not suppressed; and we will complete our analysis of results for the the three non-steroid receptor beta-lactamase assays are being run with JD 2000 to show that this non-specific activity occurs independent of ER and AR.

AR Agonist Assay 3 - MDA-kb2 Androgen-responsive transcriptional activation assay

Method Summary: This assay, run in-house by NHEERL researchers, utilized MDA-kb2 cells[2]. These cells contain endogenous human androgen receptor capable of inducing transcription of an androgen responsive gene (AR-TA). This assay employs a luciferase gene driven by the androgen responsive MMTV promoter which has been stably integrated into the cells. When androgen mimicking compounds (i.e. compounds that act as androgen agonists) are present, these cells produce luciferase in a concentration proportionate to the efficacy of the androgen mimic. Nine concentrations of each dispersant were tested for agonist activity. Each concentration was evaluated in a total of eight replicates (two independent evaluations with four replicates per assay). The first dilution of each sample was a 1:100 dilution (i.e. 0.01 dilution or 10,000 ppm) of the dispersant in cell culture medium followed by eight additional 10-fold serial dilutions. Additional detail of the method is provided in the **Appendix F**.

Results: The ability of the eight dispersants to stimulate luciferase expression in this cell line was compared to DHT. The DHT positive control dose induced luciferase expression in MDA Kb2 cells in a precise and reproducible manner within and among the plates (**Figure 1**. DHT and 17 α-Trenbolone data in MDA Kb2 cells). None of the eight dispersants displayed any potential androgenicity (i.e. did not simulate luciferase induction) at any concentration in the MDA Kb2 cell line (**Figure 2** dispersant results in MDA Kb2 cells). In fact, all the dispersants displayed significantly reduced luciferase levels due to cytotoxicity at high dispersant concentrations. The synthetic androgen 17α-Trenbolone acted as a full androgen agonist at relatively low concentrations.

Document ID: 0.7.19.1724.2

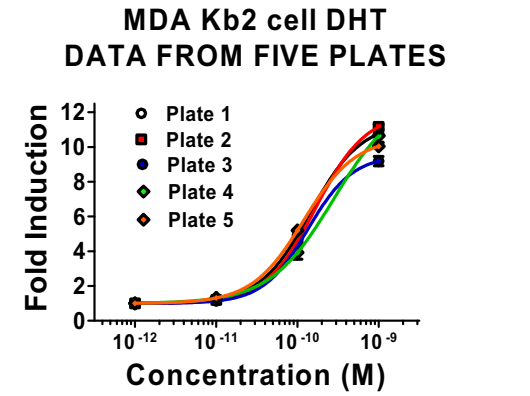


	Plate 1	Plate 2	Plate 3	Plate 4	Plate 5
LogEC50	-9.843	-9.776	-9.871	-9.553	-9.923

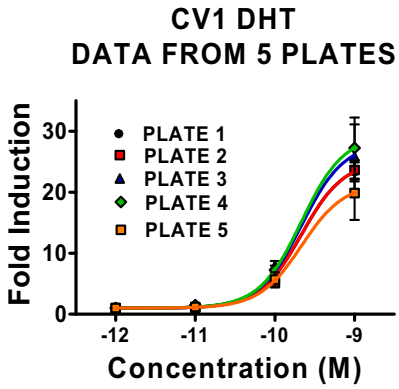
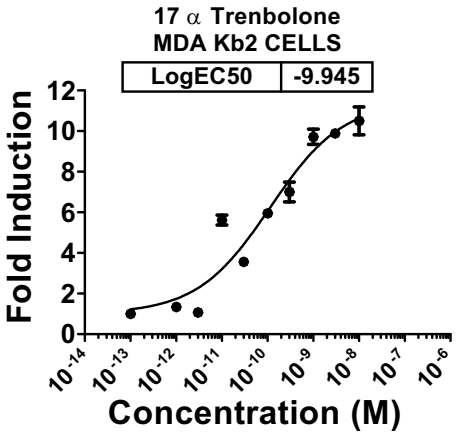


	PLATE 1	PLATE 2	PLATE 3	PLATE 4	PLATE 5
LogEC50	-9.667	-9.558	-9.726	-9.663	-9.678



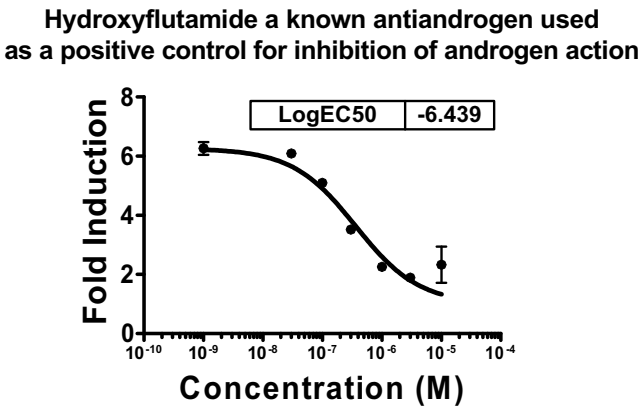


Figure 1: Included are, nonlinear regression plots of the effects of the reference androgen dihydrotestosterone (DHT) in two androgen sensitive cell lines (MDA Kb2 upper left and CV1 upper right), stimulatory effects of the synthetic androgen found in some aquatic systems in MDA Kb2 cells (lower left) and antagonism of the 1 nM DHT by the antiandrogenic drug hydroxyflutamide in MDA Kb2 cells. Data are expressed as fold over the media plus the ethanol control value. The X axis is in log scale. Values are means plus or minus standard errors of the mean.

Document ID: 0.7.19.1724.2

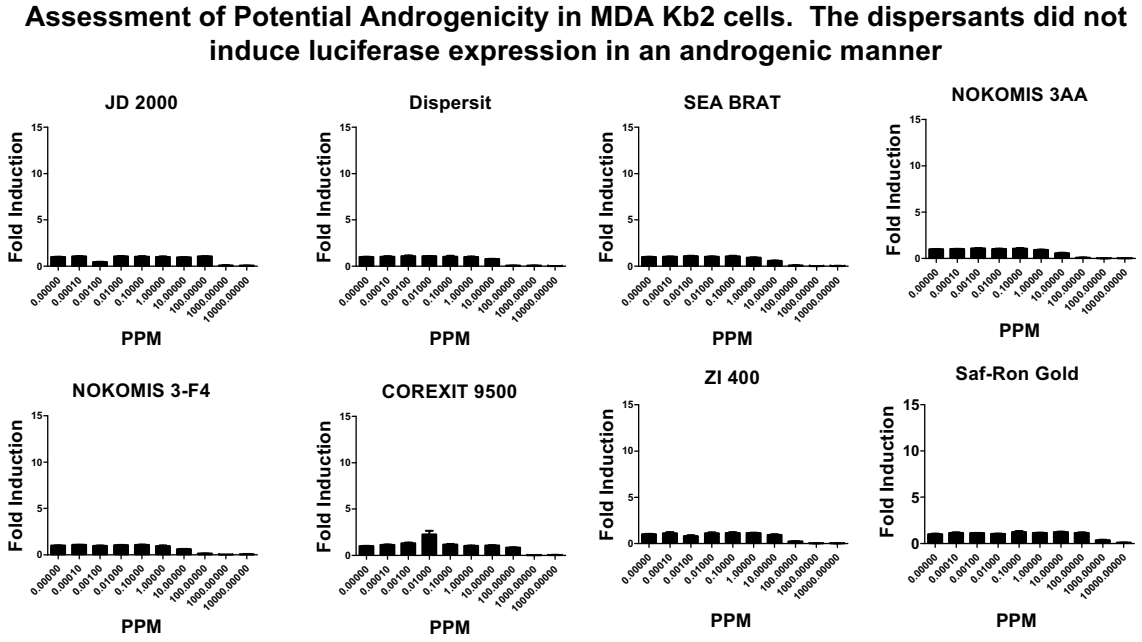


Figure 2: Assessment of the potential androgenic activity of the eight dispersants in MDA Kb2 cells. Data are expressed as fold over the media plus ethanol vehicle control. Values are means plus or minus standard errors of the mean. Dispersants did not stimulate luciferase induction over the control fold value (control fold =1).

Document ID: 0.7.19.1724.2

AR Agonist Assay 4 - CV-1 transient transcription assay

Method Summary: This assay run in-house by NHEERL is similar to the MDA-kb2 in that it also assesses the ability of a compound to mimic an androgen. This assay, however, uses CV-1 cells which do not express either endogenous androgen or estrogen receptors. In contrast to the MDA-kb2 assay, both the androgen receptor and the androgen responsive MMTV promoter- luciferase reporter constructs are introduced into the CV-1 cells for each assay via transient transfection. Nine concentrations of each dispersant were tested for agonist activity in both AR-TA assays. Each concentration was tested in quadruplicate. The first dilution of each sample was a 1:100 dilution (i.e. 0.01 dilution or 10,000 ppm) of the dispersant in cell culture medium followed by eight additional 10-fold serial dilutions. Method details are provided in the **Appendix F**.

Results: Similar to the results of the MDA-kb assays, DHT induced precise and reproducible effects on luciferase expression within and among the plates (Figure 1) and none of the eight dispersants displayed any potential androgenicity (i.e. did not simulate luciferase induction) at any concentration in the CV-1 assay (**Figure 3**). In fact, all the dispersants significantly reduced luciferase level due to cytotoxicity at high concentrations**.**

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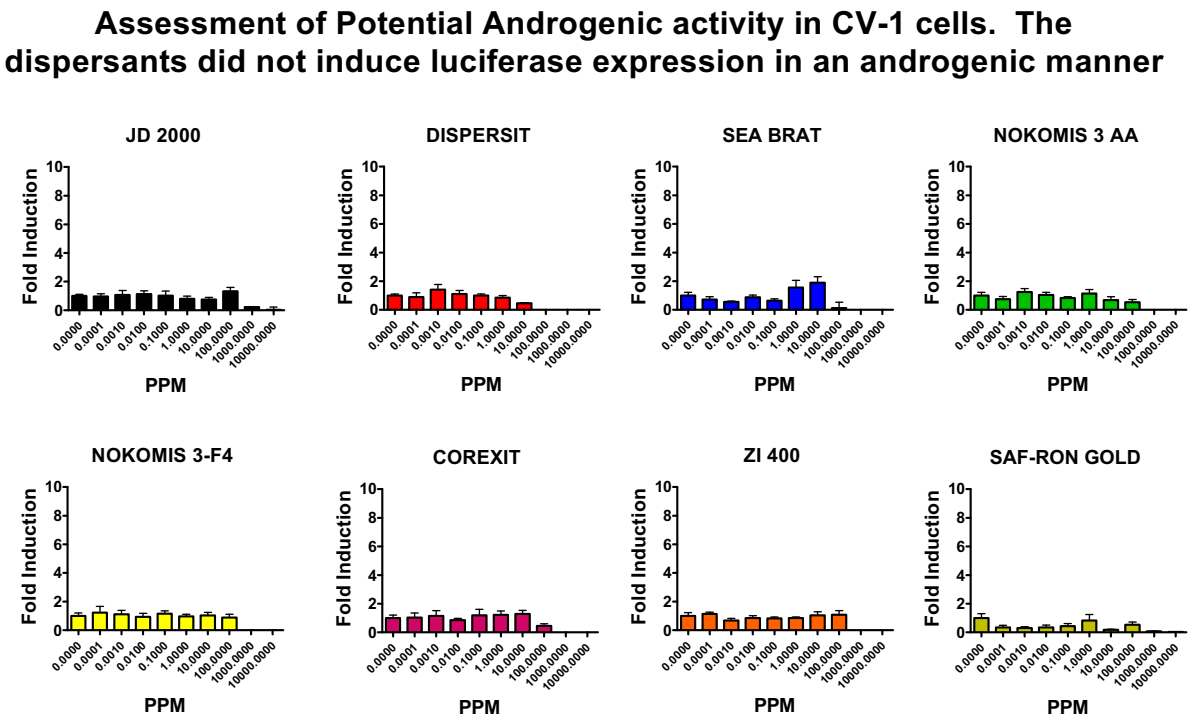


Figure 3: Assessment of the potential androgenic activity of the eight dispersants in CV-1 cells. Data are expressed as fold over the media plus ethanol vehicle control. Values are means plus or minus standard errors of the mean. Dispersants did not stimulate luciferase induction over the control fold value (control fold =1).

Document ID: 0.7.19.1724.2

Androgen Receptor Antagonist Activity

AR Antagonist Assay 1 - MDA-kb2 Androgen-responsive transcriptional activation assay in antagonist mode

Method Summary: The eight dispersants were also evaluated for antagonist activity in the MDA-kb2 cell line, run in-house by NHEERL researchers, by testing each dispersant in the presence of a near maximally stimulating concentration dihydrotestosterone (1 nM DHT). In the presence of an anti-androgen, the luciferase activity induced by DHT would be reduced proportionally to the concentration of the anti-androgen. A DHT concentration-response curve was included on each 96-well plate with the dispersants. The well-characterized antiandrogen hydroxyflutamide (CAS 80657-17-6) was run as a positive control (**Figure 1**). Six concentrations of each dispersant ranging from 0.0001 ppm to 10 ppm were tested for antagonist activity. Higher concentrations were not evaluated due to cytotoxicity seen in both MTT and CPE assays (discussed later in this document). Each concentration was tested in quadruplicate. Additional detail of the method is provided in the **Appendix F**.

Results: None of the eight dispersants displayed any potential antiandrogenicity (i.e. did not inhibit DHT-induced luciferase induction) at concentrations below 10 ppm (1E-5 dilution). At 10 ppm several of the dispersants reduced DHT induced luciferase activity, but the effects were significant (by ANOVA followed by a post hoc Dunnett's test) for the dispersants SPC 1000 and Nokomis 3-AA (**Figure 4**). As shown in **Figure 5a**, these two dispersants were the most toxic of the dispersants to MDA Kb2 cells so it is extremely unlikely that these effects represent competitive inhibition of DHT binding to the ligand binding domain of the androgen receptor. In contrast, hydroxyflutamide, used as a positive control, completely inhibited androgen-induced luciferase induction at concentrations about 1000 fold higher than of the concentration of DHT used in this assay.

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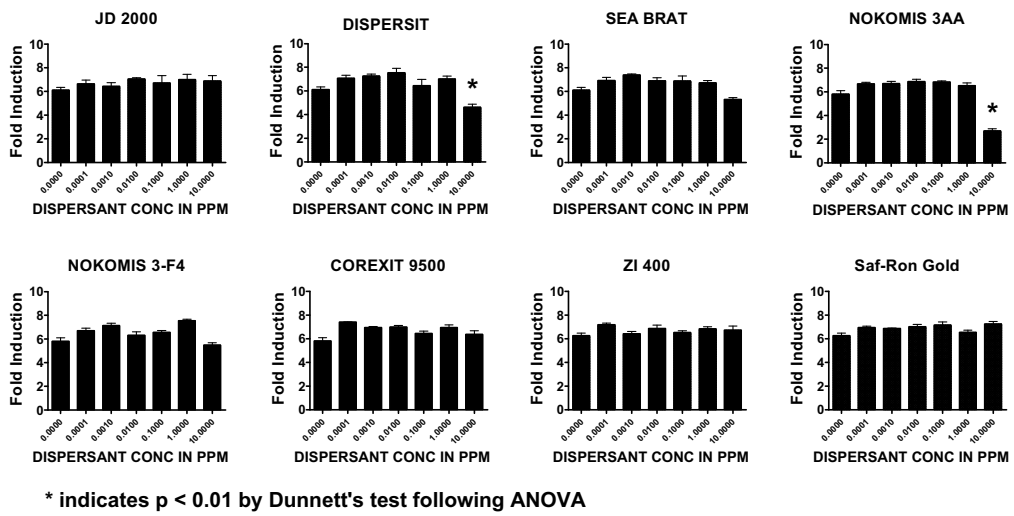
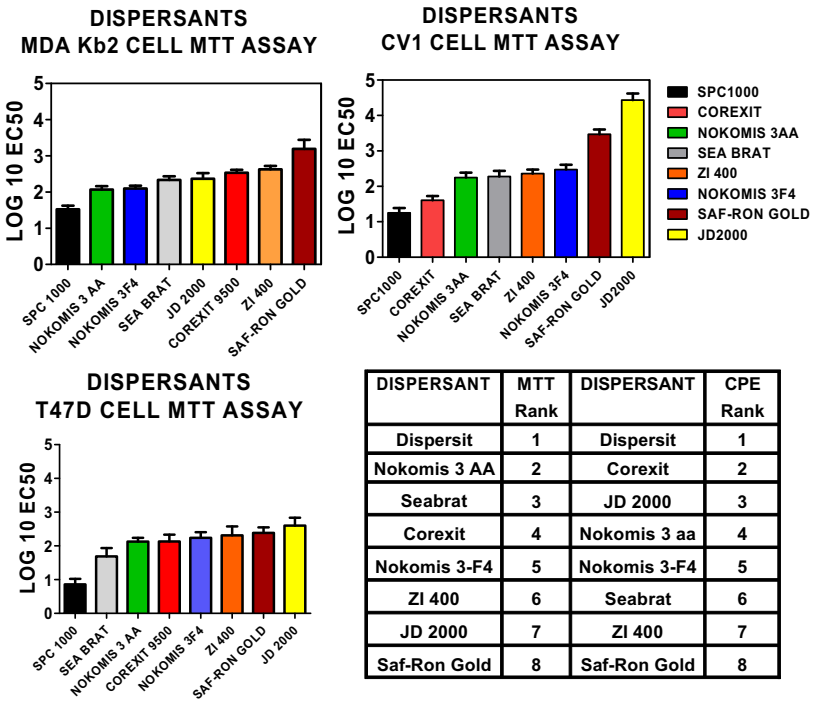


Figure 4: Assessment of the potential antiandrogenic activity of the eight dispersants in MDA Kb2 cells. Data are expressed as fold over the media plus ethanol vehicle control. Values are means plus or minus standard errors of the mean. DISPERSIT SPC 1000 and Nokomis 3-AA were the only dispersants that significantly reduced DHT-stimulated luciferase induction (DHT control fold about 6) an effect which we interpreted to result from cytotoxicity at 10 ppm, the highest concentration used in this assay.

Document ID: 0.7.19.1724.2



DISPERSANT	MTT Rank	DISPERSANT	CPE Rank
Dispersit	1	Dispersit	1
Nokomis 3 AA	2	Corexit	2
Seabrat	3	JD 2000	3
Corexit	4	Nokomis 3 aa	4
Nokomis 3-F4	5	Nokomis 3-F4	5
ZI 400	6	Seabrat	6
JD 2000	7	ZI 400	7
Saf-Ron Gold	8	Saf-Ron Gold	8

Figure 5: Summary of the Cytotoxic effects of the eight dispersants in the MTT and visual cytopathic examinations (CPE) in three cell lines. The histograms display the EC50 values for a reduction in MTT levels (determined by nonlinear regression on Prism 5.0) for the MDA Kb2 (upper right panel), CV1 (upper right panel) and T47D Kbluc

Document ID: 0.7.19.1724.2

(lower left panel) cells. In the table in the lower right panel, the overall potency of the dispersants in the MTT and CPE assays is shown, with a ranking of 1 being the most potent in inducing cytotoxicity and 8 being the least cytotoxic dispersant. DISPERSIT SPC 1000 was ranked as the most cytotoxic by both methods and SAF-RON GOLD is the least toxic of the eight dispersants. (The appendices contain additional details on this and the EC50 values are compared using a multiple range test).

Document ID: 0.7.19.1724.2

Estrogen Receptor Agonist Activity

ER Agonist Assay 1 - Multiplexed reporter transcription unit (RTU) *trans* assay

Method Summary: This assay is part of a multiplexed reporter gene panel run by Attagene Inc. (RTP, NC), under contract to the U.S. EPA (Contract Number EP-W-07-049). This assay consists of 48 human transcription factor DNA binding sites transfected into the HepG2 human liver hepatoma cell line as previously described[9]. This *trans* assay employs a mammalian one-hybrid assay consisting of an additional 25 RTU library reporting the activity of nuclear receptor (NR) superfamily members. The human ligand-binding domain of each nuclear receptor was expressed as a chimera with the yeast GAL4 DNA-binding domain that activated in trans a 5XUAS-TATA promoter, which regulated the transcription of a reporter sequence unique to each NR RTU. To ensure the specificity of detection, each individual trans-RTU system including both receptor and reporter gene was separately transfected into suspended cells followed by pooling and plating of the transfected cells prior to screening. The *trans* assay evaluates changes in activities of exogenous, chimeric NR-Gal4 proteins. This particular assay evaluated transcription for the Estrogen receptor alpha, and uses the code ATG_ERa_TRANS. This assay was run in twice in separate weeks, and in each case, run in duplicate. For this analysis, there were either 4 replicates in i6 concentrations, except for SAF-RON GOLD which was only tested in 2 replicates and 8 concentrations. Additional detail of the method is provided in the **Appendix B.1**. Concentration-response titration points for each compound were fitted as described in **Appendix C.**

Results: We observed statistically significant ER activity in two of the dispersants in the Attagene *trans*-ERα assay (Nokomis 3-F4 and ZI-400), detailed in **Table 1**. **Figure 6** (bottom panels) shows the concentration-response curves for the two active dispersants, which have EMax (maximum efficacy) values of between 3 and 4. This is in contrast to 17β-Estradiol (top left panel, blue curve), which has an EMax value of 20. The top right panel of the figure shows the corresponding reference curve for the *cis*-ERE assay, showing that 17β-Estradiol only elicits a response about half of that seen in the *trans* assay. To help interpret these results, we

Document ID: 0.7.19.1724.2

simultaneously analyzed their performance on a set of 19 reference chemicals recommended by ICCVAM[6] and EPA OPPT[7]. This analysis (detailed in **Appendix E**) shows that these assays perform well for both positive and negative predictive value. The *trans*-ERα assay correctly matched ICCVAM expectation for 15 of 17 reference chemicals, with one false positive and one false negative. A comparison of the *cis* and *trans* assays shows that the reference chemicals in the *cis* assay consistently produce EMax values about half of that seen in the trans assay. This would explain the absence of observable activity for these dispersants in the *cis* assay, because we do not consider curves with EMax values below 2. The other curves in the bottom panels of **Figure 6** show data for NP and NPE compounds, described below.

Chemical	AC50 (ppm)	EMax	R^2	p-value
Nokomis 3-F4	16	3.9	0.65	0.00017
ZI-400	25	3.4	0.68	0.0041

Table 1: Summary results for the Attagene *trans*-ERα assay for the positive dispersants. EMax: maximal fold change. AC50: concentration at which 50 of maximal activity is seen.

Document ID: 0.7.19.1724.2

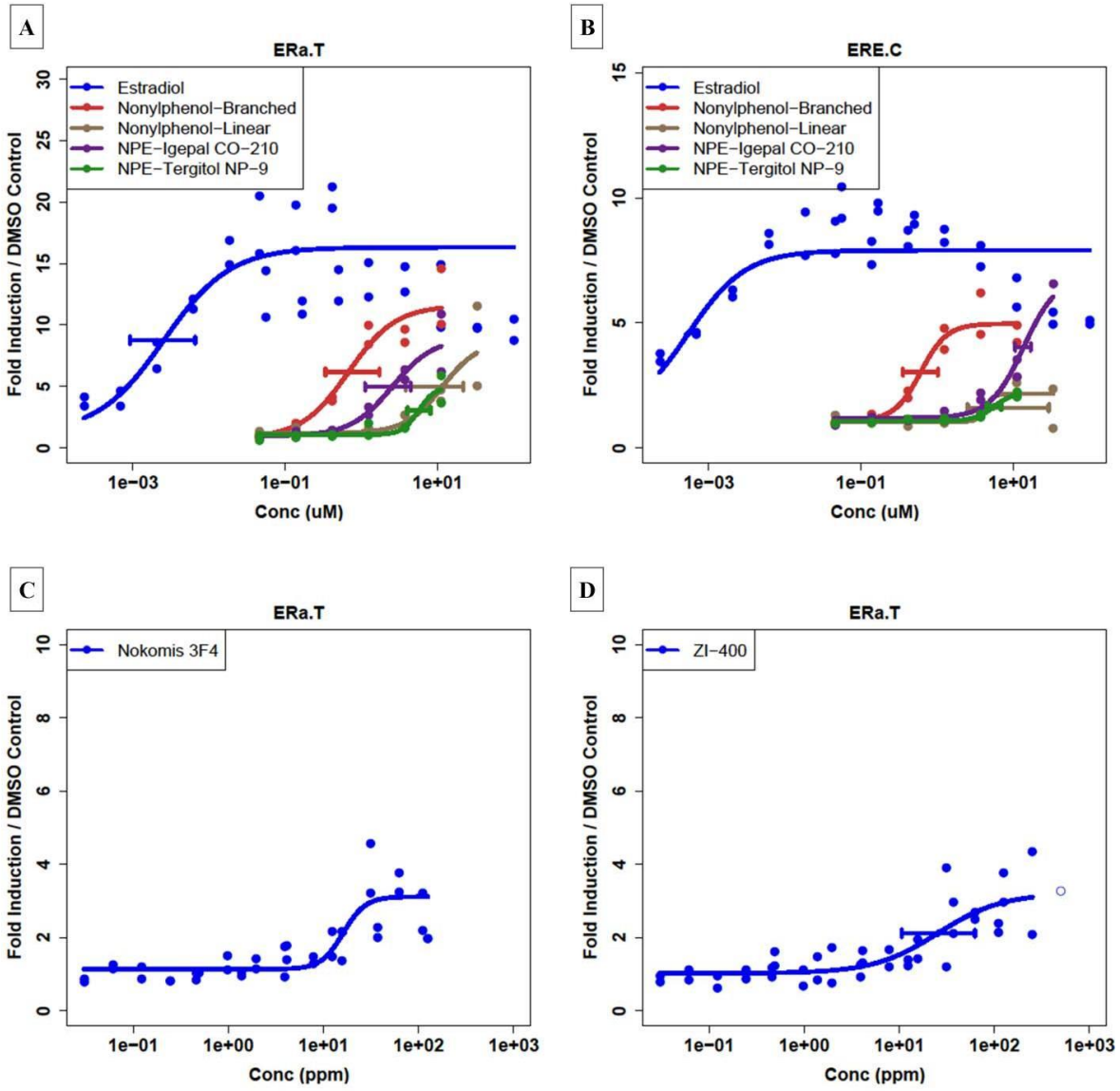


Figure 6: Concentration-response curves for the E2, NP and NPE compounds, and the two dispersants showing activity in Attagene *trans*-ERα assay. Top: E2 and the 4 NP / NPE compounds in the Attagene *trans*-ERα assay (left) and the Attagene *cis*-ERE assay (right). Bottom: ZI-400 and Nokomis 3-F4 in the Attagene *trans*-ERα assay. For the nonylphenol compounds, only two replicates were run.

Nonylphenol-related activity: It is known that some of the dispersants contain NPEs. Our initial hypothesis was that any estrogenic activity detected for the complex mixtures could be due to the

Document ID: 0.7.19.1724.2

NPEs or to NP itself generated by *in situ* degradation of the NPE, or residual contamination from synthesis of the NPE. Consequently, we tested two nonylphenols (one linear and one branched, technical grade) and two commercial NPEs in the Attagene assays. **Table 2** shows the results of this analysis, and **Figure 6** shows the corresponding dose-response curves for the Attagene ER assays. From these data, one can see that these cell-based assays show ER activity for both the NPs and the NPEs. The branched, technical grade NP is the most potent, but the second most potent is the NPE Igepal CO-210. These data indicates that the presence of an NP or NPE in a mixture could give rise to ER activity such as was seen for the dispersants Nokomis 3-F4 and ZI-400. Public information (given in **Appendix A**) indicates that ZI-400 does in fact contain an NPE.

Chemical	**Assay**	**AC50 (μM)**	**R^2**	**EMax**	**p-value**
4-Nonylphenol (linear) 104−40−5	*trans* -ERα	11	0.77	8.3	0.29
	cis-ERE	4.3	0.55	2.7	0.096
4-Nonylphenol (branched) 84852−15−3	*trans* -ERα	0.68	0.91	12	0.0049
	cis-ERE	0.61	0.092	5.4	4.9E-5
Tergitol NP-9 127087−87−0	*trans* -ERα	5.7	0.86	4.8	0.18
	cis-ERE	5.6	0.96	2.1	0.042
Igepal CO−210 68412−54−4	*trans* -ERα	2.5	0.89	8.5	0.19
	cis-ERE	14	0.96	6.5	2.1E-11

Table 2: Results of ER assays on NPs and NPEs.

To summarize this section, estrogen receptor (ER) activity was observed in two of the dispersants in the Attagene *trans*-ERα assay (ZI-400 and Nokomis 3-F4), although at relatively high concentrations and with low efficacy (EMax). We have also shown that NPs and NPEs are also active in the *trans*-ERα assay. Therefore, the activity in ZI-400 and Nokomis 3-F4 is suggestive of the presence of an NP or NPE as part of the mixture. We know that this is the case with ZI-400. The ER effect seen for these dispersants is weak, which is also suggestive of there being only a relatively small amount of NPE or some other estrogenic substance in the total mixture.

Document ID: 0.7.19.1724.2

ER Agonist Assay 2 - Multiplexed reporter transcription unit (RTU) *cis* assay

Method Summary: This assay is part of a multiplexed reporter gene panel run by Attagene Inc. (RTP, NC), under contract to the U.S. EPA (Contract Number EP-W-07-049). This assay consists of 48 human transcription factor DNA binding sites transfected into the HepG2 human liver hepatoma cell line as previously described[9]. A major difference between the *cis* and *trans* system is that in *cis* activities of endogenous transcription factors are measured. This particular assay evaluated transcription for the Estrogen receptor element (ERE), and uses the code ATG_ERE_CIS. For this analysis, there were either 4 replicates in i6 concentrations, except for SAF-RON GOLD which was only tested in 2 replicates and 8 concentrations. Additional detail of the method is provided in the **Appendix B.1**. Concentration-response titration points for each compound were fitted as described in **Appendix C.**

Results: No statistically significant activity was seen for any of the dispersants

ER Agonist Assay 3 – ER-alpha beta-lactamase Assay

Method Summary: This assay was run at the NIH Chemical Genomics Center (NCGC; Rockville, MD) in collaboration with EPA as part of the Tox21 collaboration[10]. A beta-lactamase reporter-gene cell-based assay [ERα-UAS-bla GripTite™ cell-Based Assay from Invitrogen] was used to measure ERα signaling pathway both in agonist and antagonist modes. ERα-UAS-bla-GripTite™ HEK 293 cells (ERα *bla* cells) were used with assay medium containing 2% charcoal/dextran treated FBS, 0.1 mM NEAA and 1 mM sodium pyruvate. Cells were cultured in this assay medium overnight in the flasks before the assay. The assay was performed in clear bottom black Greiner 1536-well plates. 17β-estradiol was used as a positive control in the screen. Library compounds were measured for their ability to either stimulate or inhibit the reporter gene activity. Compounds were screened in a titration series in 1536-well format. The fluorescence intensity (405 nm excitation, 460/530 nm emission) was measured using an EnVision plate reader. Data was normalized relative to 17β-estradiol control (20 nM, 100%, for agonist mode and 0.5nM, 0%, for antagonist mode), and DMSO only wells (basal, 0% for agonist mode and -100% for antagonist mode). Concentration-response titration points for

Document ID: 0.7.19.1724.2

each compound were fitted to the Hill equation yielding concentrations of half-maximal stimulation (EC_{50}), half-maximal inhibition (IC_{50}) and maximal response (efficacy) values. For this analysis, there were 8-10 replicates in 24 concentrations. Additional detail of the method is provided in the **Appendix B.3**. Concentration-response titration points for each compound were fitted as described in **Appendix C.**

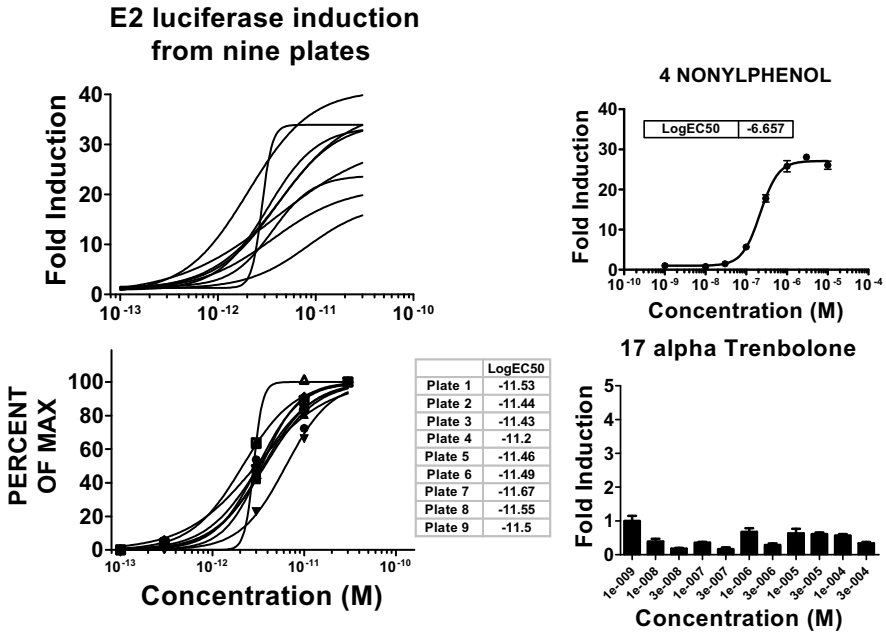
Results: No biologically relevant results were seen for any of the dispersants. See the description above under the corresponding AR assay for JD 2000.

ER Agonist Assay 4 - T47D-KBluc estrogen-responsive transcriptional activation assay

Method Summary: T47D-KBluc, is an estrogen receptor-mediated transcriptional activation assay (ER-TA) that detects the ability of chemicals to mimic estrogen[8]. This assay was run in-house by NHEERL researchers. The cells contain endogenous human estrogen receptors alpha and beta and are stably integrated with an engineered luciferase reporter gene controlled by triplet estrogen response elements. When the cells are exposed to hormone mimics, the mimicking chemical binds the estrogen receptor and activates production of the luciferase reporter gene. The luciferase product is measured in a light emitting reaction. Additional detail of the method is provided in the **Appendix F**.

Results: The ability of the eight dispersants to stimulate luciferase expression in this cell line was compared to 17β-Estradiol (CAS 50-28-2: a concentration-response curve to E2 was included on each 96 well plate with the dispersants) and to 4-Nonylphenol (branched) (CAS 84852-15-3) (**Figure 7 a,b**). 17α-Trenbolone (CAS 80657-17-6) was run as a negative control herein (**Figure 7d**) and as a positive control in the assessment of androgenicity. None of the eight dispersants displayed any potential estrogenicity (i.e. did not simulate luciferase induction) at any concentration in the current investigation (**Figure 8**). In fact, all the dispersants significantly reduced luciferase levels at high concentrations due to cytotoxicity.

Document ID: 0.7.19.1724.2

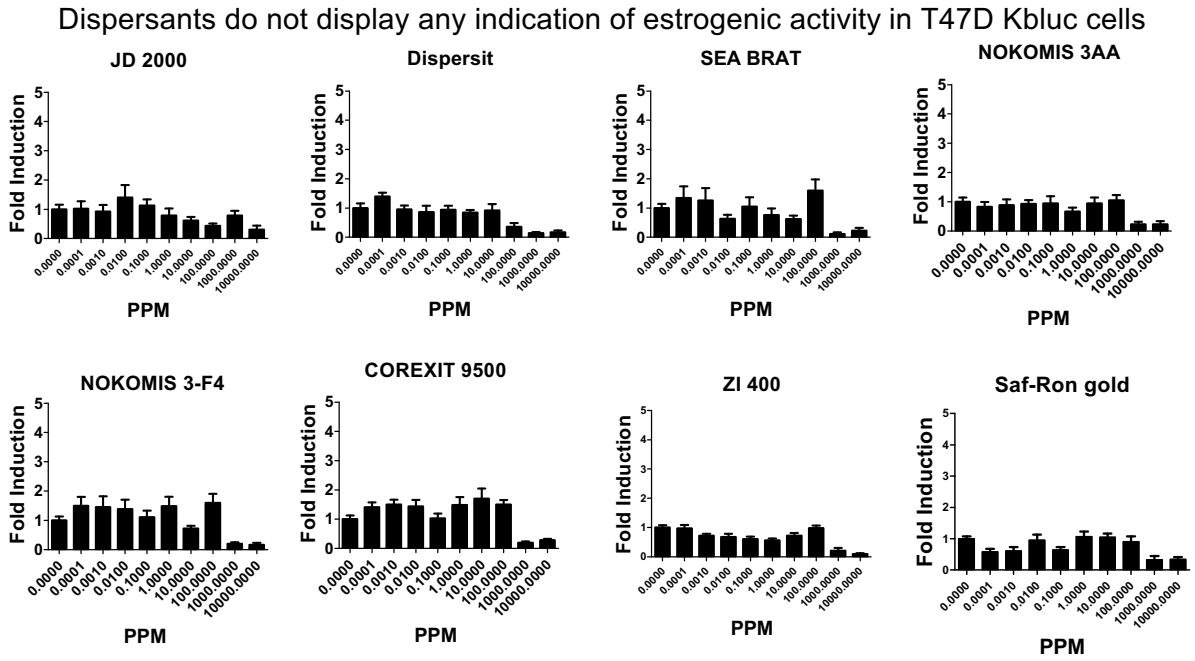


	LogEC50
Plate 1	-11.53
Plate 2	-11.44
Plate 3	-11.43
Plate 4	-11.2
Plate 5	-11.46
Plate 6	-11.49
Plate 7	-11.67
Plate 8	-11.55
Plate 9	-11.5

Figure 7: Estradiol 17β-induced (E2) luciferase expression in the nine plates used in the current study with T47D Kbluc cells, expressed as fold over media plus ethanol vehicle control (upper left) and percent of the maximal E2 stimulation (lower left). The

Document ID: 0.7.19.1724.2

effects of the xenoestrogen 4-Nonlyphenol (Branched) are shown in the upper right and the lack of estrogenicity of the synthetic androgen 17α-Trenbolone are shown in the lower right panels. Values are means plus or minus standard errors of the mean.



Document ID: 0.7.19.1724.2

Figure 8: Assessment of the potential estrogenic activity of the eight dispersants in T47D Kbluc cells. Data are expressed as fold over the media plus ethanol vehicle control. Values are means plus or minus standard errors of the mean. Dispersants did not stimulate luciferase induction over the control fold value (control fold =1).

Document ID: 0.7.19.1724.2

Cytotoxicity

Cytotoxicity Assay 1 –HepG2 Cells

Method Summary: Dispersants were tested for cytotoxicity against HepG2 cells in the MTT (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) tetrazolium assay (15) following 24 h chemical exposure to 16 concentrations with an upper concentration of 1000 ppm. All concentrations were run in triplicate. This assay was run by Attagene Inc. LC50 values were determined by fitting curves as described in **Appendix C**. Results of cytotoxicity assessment are shown below. For this analysis, there were either 4 replicates in 16 concentrations, except for SAF-RON GOLD which was only tested in 2 replicates and 8 concentrations.

Cytotoxicity Assay 2 –AR *bla* Cells

Method Summary: Cell viability after compound treatment was measured in these AR *bla* cells using a luciferase-coupled ATP quantitation assay (CellTiter-Glo viability assay, Promega). This assay was run by the NIH Chemical Genomics Center. The change of intracellular ATP content indicates the number of metabolically competent cells after compound treatment. The cells were dispensed at 2,000 cells/5 μL/well for AR *bla* cells in 1,536-well white/solid bottom assay plates using an FRD. The cells were incubated for 5 hrs at 37°C, followed by the addition of compounds using the pin tool. The final concentration range for reference compounds was 11 pM to 92 μM, and 0.000144 ppm to 1209.8 ppm for dispersants. The assay plates were incubated for 16 hrs at 37°C, followed by the addition of 5 μL/well of CellTiter-Glo reagent. After 30 min incubation at room temperature, the luminescence intensity of the plates was measured using a ViewLux plate reader (PerkinElmer). Data was normalized relative to DMSO only wells (0%), and tetra-n-octylammonium bromide (92 μM, -100%). LC50 values were determined by fitting curves as described in **Appendix C**. Results of cytotoxicity assessment are shown below. For this analysis, there were 8-10 replicates in 24 concentrations.

Document ID: 0.7.19.1724.2

Cytotoxicity Assay 3 –ER *bla* Cells

Method Summary: Cell viability after compound treatment was measured in these ER *bla* cells using a luciferase-coupled ATP quantitation assay (CellTiter-Glo viability assay, Promega). This assay was run by the NIH Chemical Genomics Center. The change of intracellular ATP content indicates the number of metabolically competent cells after compound treatment. The cells were dispensed at 5,000 cells/5 μL/well for ERα *bla* cells in 1,536-well white/solid bottom assay plates using an FRD. The cells were incubated a 5 h at 37°C, followed by the addition of compounds using the pin tool. The final concentration range for reference compounds was 11 pM to 92 μM, and 0.000144 ppm to 1209.8 ppm for dispersants. The assay plates were incubated for 18 hrs at 37°C, followed by the addition of 5 μL/well of CellTiter-Glo reagent. After 30 min incubation at room temperature, the luminescence intensity of the plates was measured using a ViewLux plate reader (PerkinElmer). Data was normalized relative to DMSO only wells (0%), and tetra-n-octylammonium bromide (92 uM, -100%). LC50 values were determined by fitting curves as described in **Appendix C.** Results of cytotoxicity assessment are shown below. For this analysis, there were 8-10 replicates in 24 concentrations.

Cytotoxicity Results (Assays 1-3)

Results of Cytotoxicity Assays 1-3 are summarized below the description of Assays 4-6.

Cytotoxicity Assays 4 THRU 9: measurements in T47D-KBluc, MDA-kb2, and CV-1 cells (MTT and CPE assessments) (5 independent assessments).

Methods summary: The ability of the dispersants to produce a general toxic effect on each of the cell lines used in the in the NHHERL in-house assays was assessed by both observational and biochemical methods. First, each well of cells in every assay was evaluated by visual microscopic examination utilizing a five point cytopathic effect (CPE) criteria scale ranging from 0 (no visual toxicity) to 4 (total cell death). CPE assessment criteria were as follows: 0 = no observed effect; 1= subtle changes suggesting effect; 2 = definite effects or death in a at least 25% of cells; 3 = 50 to 75% of cells effected; 4 = 100% of cells effected/cell death.

Document ID: 0.7.19.1724.2

Second, an assessment of the metabolic perturbation of cell health was quantitated by monitoring the ability of cells to metabolize 3-[4,5-Dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide (MTT)[11]. In this biochemical assay, healthy cells are capable of converting a yellow MTT solution into a blue dye. The healthier the cell the more blue dye produced. This biochemical assay is an indicator that the cells are metabolically active and is a measurement of general cell health. The MTT assay is a quantitative evaluation of mitochondrial function of the cells whereas the first method was a qualitative microscopic cytopathological evaluation (CPE) of cell viability and morphology

Cytotoxicity Results (Assays 4-9)

All eight dispersants disrupted cell function and caused cell death in all three cell lines in the two highest concentrations (0.01 and 0.001, or 10,000 and 1,000 ppm, respectively). Furthermore, none of the dispersants produced any sign of cytotoxicity at concentrations below 1 ppm (**Figures 9-12**).

Document ID: 0.7.19.1724.2

Cytopathological evaluation of dispersant cytotoxicity (eight plates/dispersant, four replicate wells/plate/conc) in MDAKb2, CV 1 and T47D Kbluc cells. Figures are ranked from top left to bottom right in cytotoxic potency at 1, 10 and 100 ppm. At higher concentrations CPE scores were 3-4 for all dispersants and no CPE was observed at concentrations below 1 ppm. The maximum total CPE score is 12, 4 per assay

	cytopathic effect: defined
no CPE	none observed
CPE +1	subtle changes suggesting effect
CPE+2	definite changes in more than 25 % of cells
CPE+3	50-75 % of cells effected
CPE+4	100% cells effected/dead

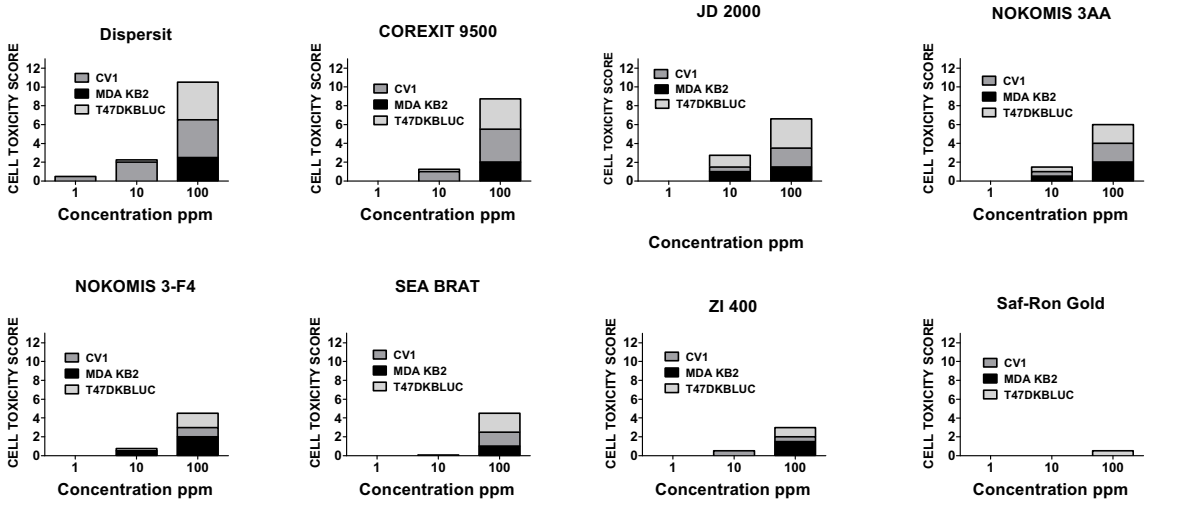


Figure 9:

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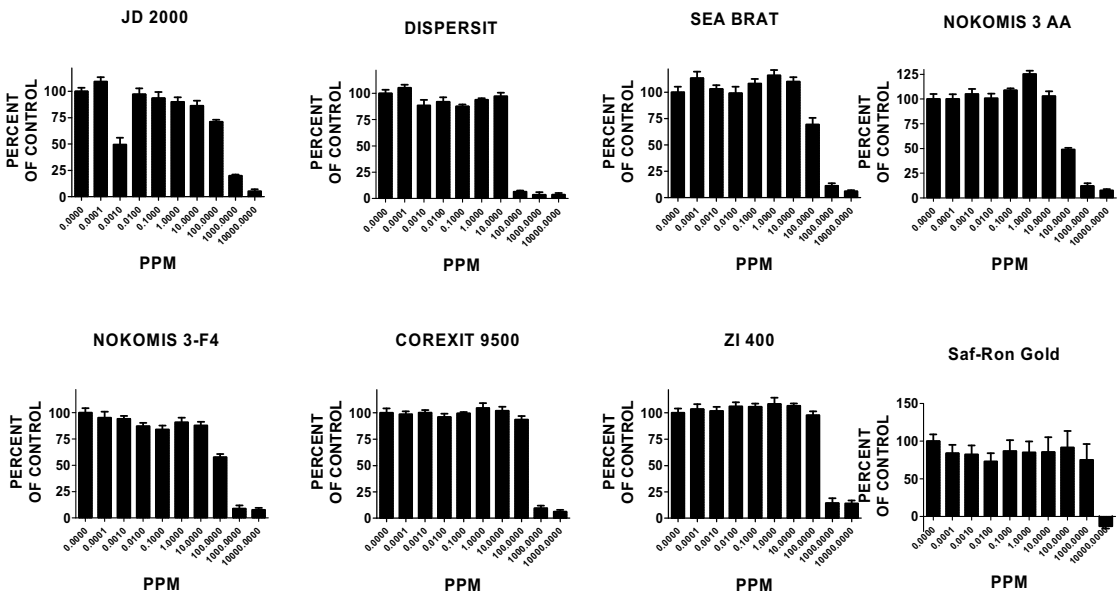


Figure 10: Toxic effects of the eight dispersants on MMT levels in MDA Kb2 cells. A reduction in MTT levels is an indicator of cytotoxcity, seen with all dispersants at the two higher concentrations (1000 and 10,000 ppm) and at 100 ppm with several of the dispersants. Data are expressed as percent of control (media).

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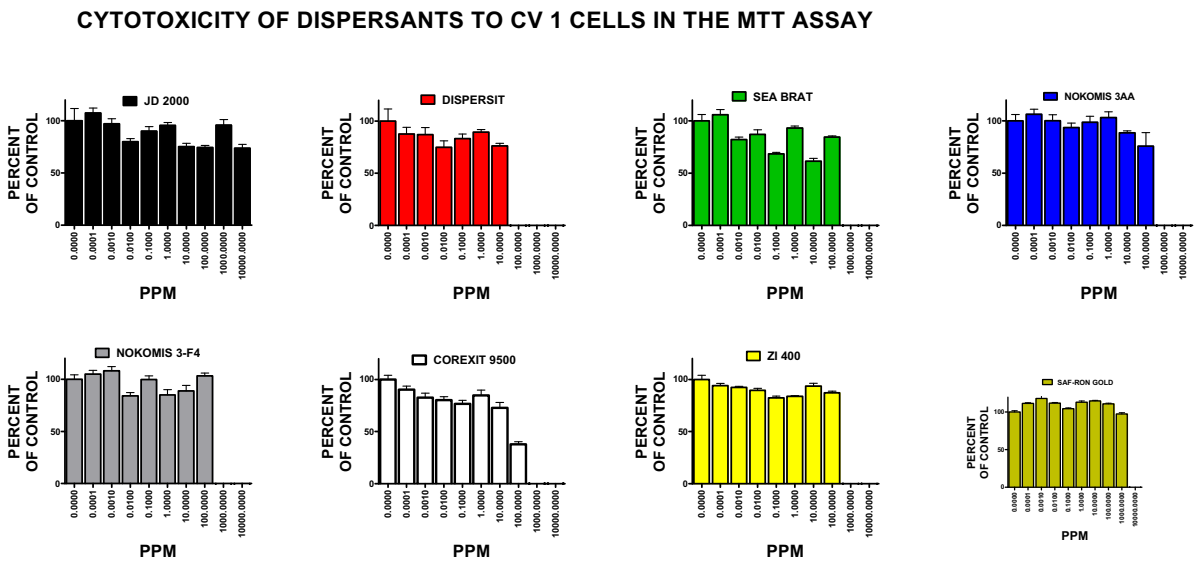


Figure 11: Toxic effects of the eight dispersants on MMT levels in CV-1 cells. A reduction in MTT levels is an indicator of cytotoxcity, seen with all dispersants at the two higher concentrations (1000 and 10,000 ppm) except JD 2000 (no toxicity was seen at any concentration) and SAF-RON GOLD (toxicity was seen only at the highest concentration of 10,000 ppm). DISPERSIT SPC 1000 and Corexit also induced cytotoxicity at 100. Data are expressed as percent of control (media).

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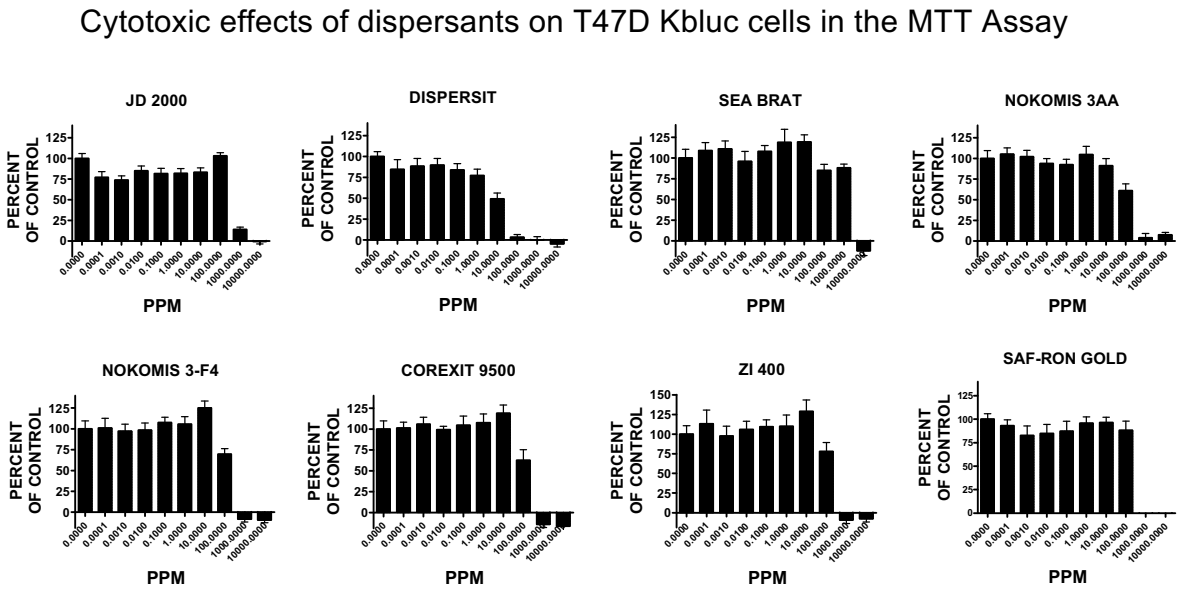


Figure 12: Toxic effects of the eight dispersants on T47D Kbluc cells. A reduction in MTT levels is an indicator of cytotoxicity, seen with all dispersants at the two higher concentrations (1000 and 10,000 ppm) and at 100 ppm with several of the dispersants. Data are expressed as percent of control (media).

Document ID: 0.7.19.1724.2

The lowest observed effective concentration (LOEC) for dispersant-induced reductions in MTT, estrogen, androgen and antiandrogen assays are reported in **Table 3**. In the table, the noted changes in the two androgen and the estrogen agonist assays do not result from hormone-like increases in luciferase activity but rather represent significant reductions in luciferase expression that likely result from the cytotoxic effects of the dispersants. Statistical significance was determined using analysis of variance followed by t-tests (LSMEANS) using PROC GLM on SAS 9.1 ($p < 0.01$ was used as the critical value to determine statistical significance).

Dispersant	MDA Kb2 cells			CV1 cells		T47D Kbluc cells	
	MTT Cytotoxicity	Androgen Antagonist Assay***	Androgen Agonist Assay	MTT Cytotoxicity	Androgen Agonist Assay	MTT Cytotoxicity	Estrogen Agonist Assay
	LOEC* (ppm)	LOEC (ppm)	LOEC (ppm)	LOEC (ppm)	LOEC (ppm)	LOEC (ppm)	LOEC (ppm)
JD 2000	100	>10	1,000	10,000**	1,000	1,000**	10,000**
DISPERSIT SPC 1000	100	10	100	10	100	10	100
Sea Brat #4	100	>10	100	1,000**	1,000	10,000	1,000
Nokomis 3-AA	100	10	10	1,000	1,000	100	1,000
Nokomis 3-F4	100	>10	10	1,000	1,000	1,000	1,000
Corexit 9500	1,000	>10	1,000	100	1,000	100	1,000
ZI-400	1,000	>10	100	1,000	1,000	1,000	1,000
SAF-RON GOLD	10,000	>10	1,000	10,000	1,000	1,000	10,000

*LOEC (ppm) represents the lowest concentration at which the dispersant consistently reduced the MTT value. Statistical significance was using $p<0.01$ as determined using LSMEANS option of PROC GLM available on SAS 9.1.
** LOEC concentration was equivocal (nonmonotonic response)
*** Antagonist assay for antiandrogens was not run the three highest concentrations (10,000, 1000 and 100 ppm) to avoid most the confounding effects of cell death. The highest concentration was 10 ppm, Dispersants that did not reduce luciferase expression in this assay at any concentration were scored as >10 ppm.

Table 3: Summary table of the Lowest Observed Effect Concentration (LOEC) of the eight dispersants in the MTT cytotoxicity in three cell lines, the estrogen agonist assay in T47D Kbluc cells, the agonist assays in CV-1 and MDA K2 cells and the antagonist assay in MDA Kb2 cells. Since none of the dispersants displayed any effect interpreted as result of the dispersant displaying

Document ID: 0.7.19.1724.2

endocrine activity we interpret all the results as indications of disruption of cell function and cell death. Since the androgen antagonist assay for antiandrogens did not include the three dispersant highest concentrations (10,000, 1000 and 100 ppm) to avoid most the confounding effects of overt toxicity (seen in the MTT assay with MDA Kb2 cells), the highest concentration in this assay was 10 ppm, Dispersants that did not reduce luciferase expression in this assay at any concentration were scored as >10 ppm. In spite of this precaution, the two most cytotoxic dispersants still reduced luciferase expression in this assay, an effect we attribute to less overt cell toxicity.

The EC_{50} values for the dispersant dose response curves were determined using nonlinear regression procedures with GraphPad Prism 5.0 software (**Figure 5 a,b,c)**. Ranking the eight dispersants in order of highest to lowest potency in the MTT assays and the CPE assessment in three cells lines indicates that there are some consistent differences among dispersants in their ability to disrupt the function and viability of these cell lines (**Figure 5 d**). Dispersant SPC 1000 appears to be more toxic in both MTT (below) and CPE assessments.

Cytotoxicity Summary

For comparison to all of the *in vitro* cytotoxicity assays, we also include LC50 values from whole animal, aquatic species lethality assays for the mysid, *Americamysis bahia*, in a 48-hr static acute toxicity test and an inland silverside, *Menidia beryllina*, 96-hr static acute toxicity test[12]**.** All LC50 values are plotted in **Figure 13** and the numerical values are listed in **Appendix D**. One can see that the cell-based LC50 values overall vary by about two orders of magnitude, and that the values for any given chemical span about one order of magnitude. The rank order of cytotoxicity varied between the various cell types, a not unexpected finding [13]. There is overlap in the range of cytotoxicity for all of the dispersants.

In order to assess, statistically, differential cytotoxicity across the eight dispersants we performed an ANOVA to determine pairwise if any two dispersants were more cytotoxic than the other. We performed this statistical test with and without multiple test correction (Bonferroni). For any dispersant and assay combination that did not achieve an LC50, a default value of 3000 ppm was used; three-fold higher than the highest concentration tested in the relevant assays. LC50 values

Document ID: 0.7.19.1724.2

greater than 3000 ppm were also set to this default value to prevent large extrapolated LC50 values from biasing the results. All six cell-based quantitative cytotoxicity assays were used for this analysis. The resulting p-values, raw and corrected, are provided in **Table 4**. Both JD 2000 and SAF-RON GOLD tend to be less cytotoxic than the other dispersants. Likewise, DISPERSIT SPC 1000 tends to be more cytotoxic than the other dispersants in the cell-based assays.

The aquatic species LC50 values are almost always lower than the cell-based LC50 values. As with the cell-based assays, JD 2000 is the least toxic in the whole animal assay.

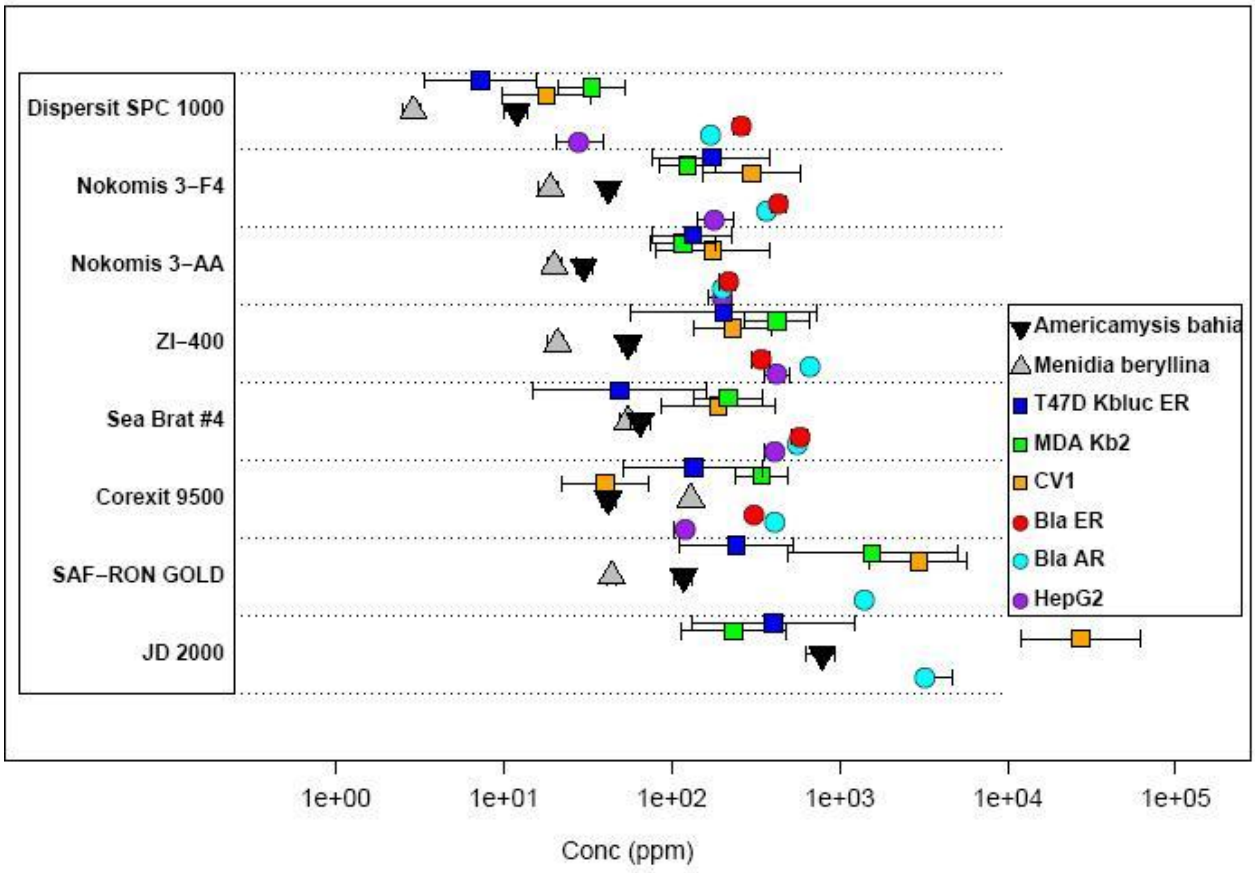


Figure 13: Toxicity data for the dispersants, combining data from cell-based assays in this report with data on aquatic species from a concurrent EPA report [12]. Each horizontal band shows the data for one dispersant. Results are presented from all 6 quantitative cytotoxicity assays. Cell-based LC50 values (concentration at which 50% lethality or effect is observed) are indicated by circles and

Document ID: 0.7.19.1724.2

squares. Aquatic species LC50 values are indicated by triangles. Note that all dispersants were tested in all assays, and missing data points indicate that no toxicity was seen in that assay at the highest concentration tested. 95% confidence intervals are shown for all assays.

	JD 2000	Dispersit SPC 1000	Sea Brat 4	Nokomis 3-AA	Nokomis 3-F4	Corexit 9500	ZI-400	SAF-RON GOLD
JD 2000		0.1456	0.308	0.1876	0.2464	0.224	0.364	1
Dispersit SPC 1000	0.0052		0.84	1	0.644	1	0.126	0.056
Sea Brat 4	0.011	0.03		1	1	1	1	0.1456
Nokomis 3-AA	0.0067	0.082	0.11		1	1	0.42	0.0756
Nokomis 3-F4	0.0088	0.023	0.5	0.12		1	1	0.1036
Corexit 9500	0.008	0.086	0.34	0.42	0.65		1	0.0952
ZI-400	0.013	0.0045	0.68	0.015	0.19	0.12		0.1652
SAF-RON GOLD	0.92	0.002	0.0052	0.0027	0.0037	0.0034	0.0059	

Raw P-Value

Bonferroni Corrected P-Value

Table 4: Statistical comparison of LC50 cytotoxicity values from cell-based assays across the eight dispersants. All dispersants combinations with a p-value less <0.05 are shaded pink. All values below the diagonal are raw p-values derived from the ANOVA, while all values above the diagonal swere adjusted for multiple testing.

Document ID: 0.7.19.1724.2

Other Molecular Targets

In addition to ER and AR, we also analyzed the chemical collection (dispersants plus reference chemicals) using a multiplexed reporter gene assay battery that evaluates activity against a panel of transcription factors including nuclear receptors[5, 9]. These assays were run by Attagene Inc. These data also provide a measure of quality control related to the specificity of any endocrine-related activity caused by the dispersants. The description of the assay and a complete list of targets is given in **Appendix B.2**. All of these assays were carried out twice, one week apart, and in each week, duplicate runs were performed. **Figure 14** summarize all of the results for the dispersants. This plot helps illustrate several key points about the data.

First, as the concentration of a chemical approaches the cytotoxic level, generalized cell stress occurs, accompanied by broad misregulation of transcription. When this threshold is reached, many assays in this system simultaneously activate, but this activity is assumed to be non-specific. One sentinel of this cell stress behavior is NRF2, which is an indicator of generalized oxidative stress. Therefore, if we see many assays become active at about the same concentration, especially if NRF2 is among them, we can discount any target specificity above that concentration. We see this behavior for Corexit 9500 (~50 ppm), JD 2000 (~500 ppm), Nokomis 3-AA (~75 ppm), Nokomis 3-F4 (~75 ppm), Sea Brat #4 (~90 ppm) and ZI-400 (~50 ppm).

The ER activity for Nokomis 3-F4 occurs at a concentration well below where this non-specific behavior is indicated. For ZI-400, the confidence intervals for ER and NRF2 overlap, indicating a possibility that the ER result is non-specific.

The lowest activity that is generally seen is for PXR (Pregnane-X-receptor), which is a xenosensor. This behavior is entirely expected, is common across many classes of organic chemicals, and is not in itself an indicator of toxicity. PXR has been reported to be a xenosensor that acts to protect against endocrine active chemicals[14]. PPAR (peroxisome proliferator activating receptor[15-19]) activity is observed for a number of the dispersants, at higher concentrations than is seen for the PXR assays. There is an extensive literature on PPAR activity

Document ID: 0.7.19.1724.2

associated with disease in rodents, although the human relevance is unclear [15-18, 20-23]. However, only for Corexit 9500 and Nokomis 3-AA (and potentially for SAF-RON GOLD) is the PPAR signal well below the level of non-specific activity. Vitamin D receptor (VDR) activity is seen for Sea Brat #4 and Nokomis 3-AA below but near the concentration of non-specific behavior.

The activity of JD 2000 cannot necessarily be dismissed as being all non-specific, despite it occurring at the same concentration as NRF2 activity. This is because there are only two target families being activated – PXR and PPAR. A similar observation can be made about DISPERSIT SPC 1000. At the concentration of NRF2 activity, we only see activation of two PXR assays and one for SREBP (SREBF1 sterol regulatory element binding transcription factor 1) which is involved in fatty acid synthesis regulation.

The largest effect (in terms of EMax) of any dispersant and assays is for ZI-400 and AhR (Aryl hydrocarbon receptor), with EMax >30. The AhR is well-known for its role in mediating the adaptive metabolism of xenobiotics, and also in the toxicity that follows exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin). This indicates the potential for the presence of a dioxin-like compound, which would be cause for concern. In the ToxCast Phase I data set[4, 5] of 309 chemicals, we saw only three with AhR efficacy higher than is seen with ZI-400. It is not clear though that this effect is specific, given that it occurs in the same concentration range as activity in a number of other targets, and above the NRF2 AC50.

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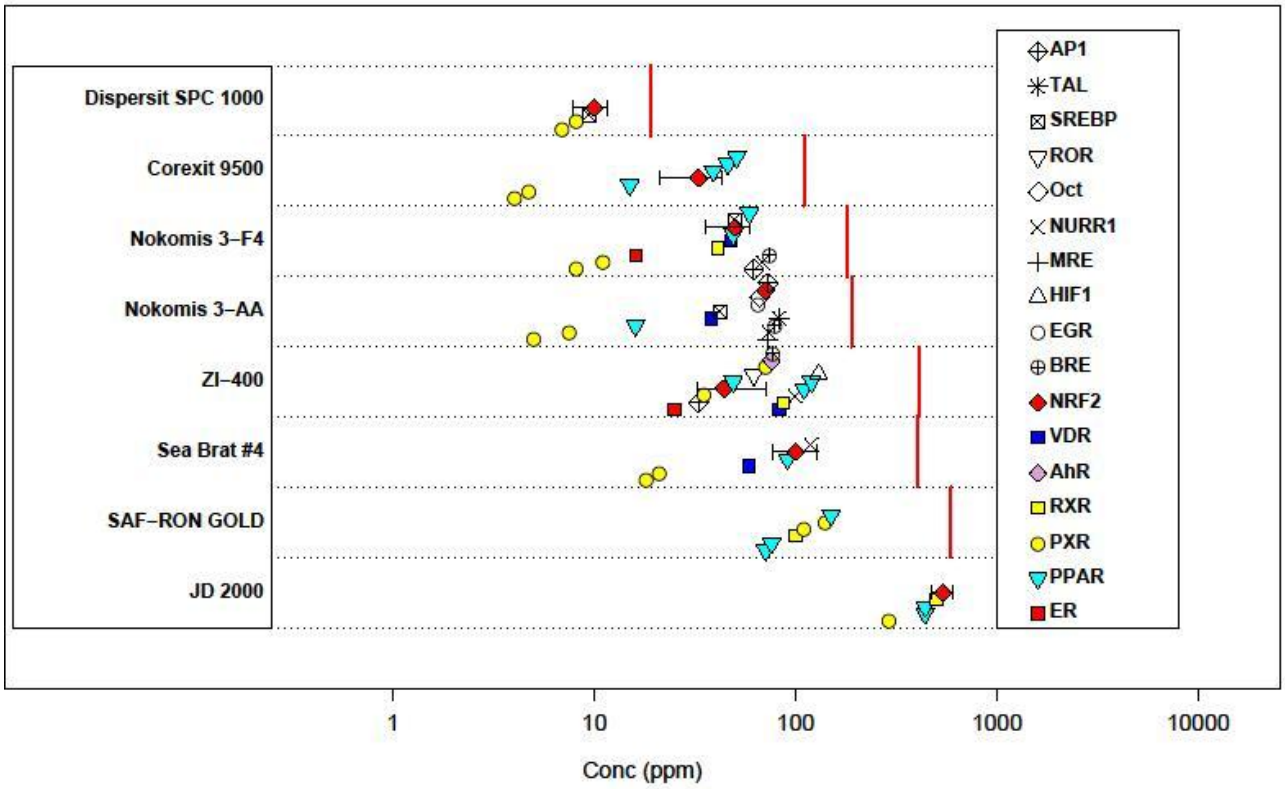


Figure 14: Summary plot of all Attagene *cis* and *trans* assays for dispersants with AC50 values below cytotoxicity levels. Each horizontal band displays data for a single dispersant. The x-value is the AC50. Points are staggered in the y-direction to make overlapping points visible. Where there were multiple assays for a given gene target (e.g. PPARα, PPARδ, PPARγ) were given a single symbol. For illustration, 95% confidence intervals are shown on assays for NRF2. The vertical red lines indicate the LC50 for cytotoxicity in the HepG2 cells**.** Dispersants are ordered by decreasing cytotoxicity LC50 values.

The major conclusions of this section are that several of the dispersants display PXR and PPAR activity at concentrations below where cell stress and cytotoxicity occur. These are expected responses in hepatocytes to xenobiotics. The ordering of dispersants by lowest concentration at which bioactivity occurs is consistent with the ordering based on cytotoxicity. One observation of more general interest is that we are able to detect specific target-based bioactivity in complex mixtures such as these. This is observation is relevant to the challenges of real world chemical toxicity testing, wherein humans and other organisms are often exposed to

Document ID: 0.7.19.1724.2

complex mixtures rather than the pure single compounds that are the subject of typical toxicity testing.

Document ID: 0.7.19.1724.2

Conclusions

The primary conclusions are as follows:

For six of the eight dispersants tested we found no evidence that they would be capable of interacting with estrogen or androgen receptor function from testing in multiple *in vitro* systems. For the other two dispersants, there was a weak ER signal in one assay. However, integrating over all of the ER and AR results, these data do not indicate that any of the eight dispersants will display biologically significant endocrine activity via the androgen or estrogen signaling pathways. As mentioned previously, NPEs (and their breakdown product NPs) can be endocrine disruptors in fish[1], so the risk of using NPE-containing dispersants should be carefully weighed against the expected benefits. One limitation of the present study is that there are other routes by which chemicals can cause endocrine disruption, as well as other types of toxicity that have not been tested for here. Most importantly though, there were no indications of estrogenic activity for Corexit 9500, the dispersant currently being used in the Gulf of Mexico.

All of the dispersants showed cytotoxicity in at least one cell type at concentrations between 10 and 1000 ppm. Both JD 2000 and SAF-RON GOLD tend to be less cytotoxic than the other dispersants. Likewise, DISPERSIT SPC 1000 tends to be more cytotoxic than the other dispersants in the cell-based assays. The aquatic species LC50 values tend to be lower than the cell-based LC50 values. As with the cell-based assays, JD 2000 is the least toxic in the whole animal assay.

Document ID: 0.7.19.1724.2

Supplementary Information

Supplemental information, including a QA Statement, is included in the referenced Appendices.

QA Summary

All research described in this report was conducted under a comprehensive and rigorous program of quality assurance (QA), as documented in the QA supplemental file. The overall goal of the QA program was to ensure research data were of known and acceptable quality. QA staff surveillance of critical research activities was an important feature of the overall QA approach and ensured quick and effective resolution of any problems. The conclusion of the QA review process is that results presented in this report accurately reflect the raw data obtained during the course of the research and are scientifically valid and defensible.

Document ID: 0.7.19.1724.2

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Version
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Received(Date): Wed, 30 Jun 2010 19:38:41 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: DC meeting readout
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,"dwh.leadership@noaa.gov" <DWH.Leadership@noaa.gov>

Here is a short read out from the Deputies Committee meeting held today. Heather Zichal chaired it.

Situation update – nothing new – I provided our handouts on loop current, trajectories, and fisheries closures. It was noted that there will be a Congressional briefing on the loop current tomorrow, and another call with the east coast governors on the possibility of oil getting into the loop current and coming ashore on the east coast. I reported that the current loop current projections do not seem to make that likely. I asked the question about whether we needed to raise the pay ceiling because of the overtime people are working (mary asked me to raisethis) and Heather asked that we send over a formal query that they could then forward to OPM. This has come up in a prior meeting, but it was put off. So we need to prepare the question.

Response coordination – There was a long discussion on how well (or not) the USG is communicating all the information that we have. There was yet another discussion about whether the public is aware of what to do when private marsh land is oiled. EPA argued that we should provide more definitive guidance than our marsh clean up toolkit paper. USDA argued that their soil conservation extension service is providing that guidance. DOJ said no one should be giving definitive advice. No one even knew where to find our tool kit paper on the web or elsewhere any more. So we discussed the fact that there needs to be a new communications strategy so that we provide information repeatedly. I proposed the idea that Jane and I heard yesterday that to overcome the problem that many people don't have regular access to the internet, that the USG out to take out an ad daily in the NO newspaper (and others too) where it could post announcements and other helpful info. Heather promised an update on how comms will be improved by next week's meeting. Under the topic of international coordination, State Dept reported that they were helping us get the OK for a NOAA vessel that would be entering Cuban waters to do some research. There was also a discussion that there would be many principals in the Gulf next week including Salazar, Mabus, and Sec. Labor. DOJ leadership will all be in the Gulf the following week I mentioned the two events in the first week in August: GOMA and the seafood one.

Policy workgroups updates -- On post event recovery (the Mabus assignment) there is a presidential memo that was signed today that lays out his charge – we should try to get this. Apparently Mabus has 10-12 people who are being loaned to him to work on this (note – none from NOAA). He is doing a long listening tour first in the region – for approx one month. On environmental stuff, there was much discussion on the new LA "rocks" berms proposal. Apparently the WH has directed that the rocks permit be approved in two (of the five) requested locations and that the permits specify that the rocks must be removed once the spill event is

finished. EPA reported on their report on dispersants. I know we now have it. They claim to have spoken to Steve M about it this morning, but I don't think we ever got to see it in advance of it coming out. Apparently this is the first of 3 related reports EPA will issue. The two others will be on the toxicity of the oil and the toxicity of oil/dispersant mixtures. We should ask them now for more info on these. Bob P claimed in the meeting that these would be just data reports – but looking at them there is a great deal of analysis in the report as well. There was a positive report on the restoration work group and a clarification that CEQ is coordinating that work. DHS said they are now sending all proposals they receive for response/restoration projects to CEQ to sort through. DOI reported that there would be a new moratorium proposal out later this week and that they are appealing the stay of the original moratorium proposal. There was much positive feedback on the seafood safety announcement. Finally on health there will be an emphasis on mental health issues in the Gulf over the next week, and there is a new Admiral (Galloway) in the NIC who will focus exclusively on health issues.

Last item – Tomorrow Adm Allen will no longer be active USCG. But he will continue to lead the UC and will have a new uniform that reflects his status as above the USCG and speaking for the entire USG.

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

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Received(Date): Thu, 01 Jul 2010 14:16:33 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Dispersant impacts on corals and marshes
To: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Jessica_Kondel.vcf

Hi--
During today's briefing on the Hill, Rep Wasserman Schultz asked about the impacts of dispersants on corals and marsh areas. Dr. Lubchenco would like me to follow up with her office with any information we can provide. I looked through fact sheets, Q&As, etc. but didn't see anything that would help answer the Congresswoman's question. Do we have information on the impacts (or potential impacts) as well as any information on any monitoring of this issue?

Thanks.
Jessica

Jessica Kondel

Legislative Affairs Specialist

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Received(Date): Fri, 02 Jul 2010 14:16:43 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 1, 2010
image001.emz
oledata.mso

Highlights

ξ **Relief Wells Technical Update** – The *Development Driller III*, drilling the first relief well, has drilled ahead to 17,035 feet and completed its fourth "ranging" run. A fifth and sixth ranging run are planned. Ranging will enable the drilling team to precisely locate the Macondo well bore and ultimately drill directly into it. A video overview on the progress of the relief wells and an explanation of the bottom kill procedure is now available on the BP website at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

ξ **Volunteers** – More than 3900 trained workers are on the job through BP's Qualified Community Responders program in Alabama, Florida, and Mississippi. There are more than 10,000 qualified trained workers across the states who have spent more than 42,000 hours on clean up activities. 145 training classes have been scheduled for workers in Mississippi, to be completed over the next five days.

ξ **Claims Update** – 1200 people are working on claims teams and 35 offices are open across the Gulf Coast, with translation capability in 9 offices. The average time from claim to check is 4 days for individuals, about 8 days for businesses. BP is working with Ken Feinberg and team to establish an Independent Claims Facility (ICF). It is anticipated that the ICF will assume all responsibility for claims sometime in August. Until such time as ICF begins to assume responsibility for claims and claim policies, there are no immediate changes to the process. Claimants should continue to follow instructions and use materials found at www.bp.com/claims. Claims offices and adjusters will remain open and will continue processing claims and monthly advances as usual until such time as new protocols for claims processing under the ICF are finalized.

Offshore – Containment and Surface Response

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,035 feet below sea level and within 100' feet of the Macondo well bore. Work has progressed to the "ranging" stage where special tools are run into the well to precisely locate the MC252 casing. *For a detailed explanation of this process, visit BP's website* at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039

ξ The second relief well (work being performed by *Development Driller II*) has completed casing and cementing to 12,580 feet below sea level. Drilling began on May 16.

Containment and Recovery

- Lower Marine Riser Package (LMRP) Cap – Approximately 14,875 barrels of oil have been captured through the LMRP cap during the last 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared.
- Near Term Containment: Q4000 Direct Connect – This containment system is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Approximately 8,204 barrels of oil were flared.
- Over the past 24-hour period, 53.3 million cubic feet of natural gas were flared from the Enterprise and the Q4000.
- Long Term Containment: Permanent Riser Systems – A floating riser containment system will be connected to the *Helix Producer* vessel in early July. This system, which will collect oil from the top of the blowout preventer, is able to disconnect from the ship during a hurricane. A second floating riser system has been fabricated to be connected to the *Toisa Pisces* producer vessel. That ship is in a staging area. It is anticipated that this second system will be available in July.
- Long Term Containment: *Discoverer Clear Leader* – A third ship, the *Clear Leader* is at the staging area and a connection system is being designed to provide additional flow containment to this ship. Mobilization of some parts of this system is expected in July.
- More information on the containment systems, including a June 18 visual slide pack, can be found in the "Technical Update" section on BP's website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

-

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs

are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

State Summaries: Operations, Shoreline Impact & Claims

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

LOUISIANA

Offshore: Skimming operations were halted due to sea state. No burn operations were possible due to increased sea state.

Shoreline: Branches are preparing resource for rapid response to likely oiling in several locations from St. Bernard Parish to Grand Isle. Continued operations throughout Barataria Bay, South Pass and Grand Isle. Most branches on weather stand-down.

Inshore: 12 fishing vessel skimming Task Forces are currently stood down pending improved weather conditions. 27 Shallow Water Barge Skimming Systems are also stood down in 5 different parishes.

Wildlife: 229 wildlife specialists utilized 4 helicopters, 74 boats, and 7 airboats to search for and recover oiled birds. 72 Birds released in the last 24hrs and 78 birds expected to be released 7/1 in Georgia. Some birds are being transported to the zoo for continued rehab.

Air Operations: 0 dispersant flights due to current weather/sea state conditions.

Boom: Deployed 8,346' hard boom in last 24 hrs.

Parish	Claims Paid	Parish	Claims Paid
Jefferson	$13,013,943	Ascension	$115,983
Terrebonne	$12,915,698	Saint Landry	$98,011
Plaquemines	$12,412,022	Jefferson Davis	$91,450
Lafourche	$7,902,515	Saint James	$69,050
Saint Bernard	$5,168,880	Beauregard	$65,700
Orleans	$3,678,947	Acadia	$57,850
Saint Tammany	$3,546,816	Ouachita	$46,378
Vermilion	$2,062,414	Avoyelles	$44,300
Calcasieu	$1,535,806	Concordia	$39,387
Saint Charles	$1,508,868	East Feliciana	$28,924
Saint Mary	$1,245,013	Rapides	$34,590
Iberia	$1,167,224	West Baton Rouge	$28,000
Lafayette	$795,201	Saint Helena	$20,500
Cameron	$724,100	Union	$20,000
Tangipahoa	669,600	Iberville	$20,000
East Baton	$447,074	Webster	$15,300

Rouge			
Livingston	$323,639	Allen	$15,000
Saint John the Baptist	$179,910	Caddo	$13,320
Saint Martin	$145,800	Other Parishes	$955,421
Washington	$138,350	**Total Louisiana**	**$71,560,709**
Assumption	$136,000		

MISSISSIPPI

Shoreline: Cleanup crews worked at Belle Fontaine and Biloxi Beach to respond to tarball impact. Periodic beach cleanup operations were suspended due to weather.

Nearshore: Suspended all nearshore operations due to weather. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time. VOO training conducted in Pascagoula. Tactical control of VOO Task Force shifted to MS.

Offshore: Weather hampered skimming operations.

Boom: Magnolia Project Operations suspended due to inclement weather. Boom gates at Biloxi Bay, Pascagoula Bay and St. Louis Bay remained closed and will be tended by Vessels of Opportunity. Deployed 0' hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Harrison	$6,936,884	Lawrence	$23,500
Jackson	$3,362,526	Madison	$23,342
Hancock	$2,135,264	Rankin	$19,469
Pearl River	$223,970	Jones	$17,149
Stone	$198,364	Lincoln	$15,000
George	$143,770	Hinds	$14,500
Lamar	$117,065	Clarke	$12,500
Forrest	$54,820	Washington	$12,343
Marion	$46,000	Clay	$10,000
Pike	$42,400	Other Counties	$496,149
DeSoto	$28,807	**Total Mississippi**	**$13,933,823**

ALABAMA

Shoreline: Manual beach cleanup operations in Mobile and Baldwin Counties were suspended at 1200 CDT due to weather. Training for boom towing was conducted during down time.

Nearshore: Suspended all nearshore operations due to weather. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time. VOO were deployed at Perdido Pass and Gulf Shores. VOO training conducted in Orange Beach.

Offshore: Awaiting improved weather to deploy.

Boom: Hard boom deployed at Billy Goat Cut. A Notice to Mariners was issued and Alabama Marine Patrol is on-scene tending the boom gate. Deployed 6,500' hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Mobile	$15,439,006	Escambia	$46,066
Baldwin	$9,744,508	Marengo	$38,606
Monroe	$119,420	Washington	$29,424
Jefferson	$109,707	Wilcox	$29,210
Montgomery	$87,340	Walker	$25,000
Covington	$62,500	Lee	$24,183
Clarke	$61,075	Dale	$20,924
Madison	$60,276	Houston	$19,696
Tuscaloosa	$54,484	DeKalb	$17,400
Shelby	$52,296	Other Counties	$539,354
Etowah	$46,111	**Total Alabama**	**$26,626,586**

FLORIDA

Shoreline: Mechanical and manual cleanup periodically suspended due to weather. Safety and operations refresher training conducted throughout the region during down

time.

Nearshore: Suspended all nearshore operations due to weather. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time. VOO training conducted in Panama City and Destin.

Offshore: Awaiting break in weather to deploy and protect the area from Pensacola Bay to Port St. Joe. Utilized weather delays for safety stand-down and replenishment of consumables.

Boom: Boom deployment periodically suspended due to weather. Boom inspection and maintenance conducted throughout Franklin, Gulf Bay and Walton Counties. Deployed 0' hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Escambia	$4,075,102	Taylor	$73,933
Okaloosa	$3,888,084	Citrus	$59,166
Franklin	$3,467,116	Liberty	$58,370
Bay	$3,012,820	Hernando	$57,788
Santa Rosa	$2,188,799	Washington	$45,417
Wakulla	$783,148	Broward	$36,061
Gulf	$668,895	Lee	$29,200
Walton	$625,748	Manatee	$27,688
Orange	$234,610	Levy	$26,312
Pasco	$193,104	Gadsden	$25,850
Pinellas	$167,970	Calhoun	$23,045
Duval	$160,193	Jackson	$22,514
Collier	$120,930	Dixie	$21,633
Hillsborough	111,050	Holmes	$21,000
Leon	$109,410	Other Counties	$321,117
Monroe	$84,053	**Total Florida**	**$20,740,155**

Claims

Filing Claims / Claims Offices – 34 Claims Offices are open across the Gulf Coast to provide locations where people can go to file or discuss claims. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at:

http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	



Karen St John

BP America

Sr. Director, Regulatory Affairs


B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$2,595,970
LA	$71,560,709
MS	$13,993,823
AL	$26,626,586
FL	$20,740,155
GA	$596,340
Other	$1,824,828
Total	**$137,878,411**

Gulf of Mexico Incident Daily Dashboard

Period: 6/30/10 6AM – 7/1/10 6AM

Produced by BP 's Washington , DC Office-Sources: BP and National Incident Command

Highlights:

- **New Technical Update available at www.bp.com describes relief well progress**
- **Weather has limited surface response activities in the past three days, including burns, boom deployment and dispersant applications.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	290	**671,173**
Aerial & Vessel dispersants applied (gals)	0	**1,032,897**
Subsea dispersants applied (gals)	13,474	**590,213**
In-situ Burns	0	**275**
In-situ Burn (bbls burned)	0	**237,950**
LMRP CAP/Enterprise Oil Recovered (bbls)	14,875	**404,360**
LMRP CAP+Q4000 Gas flared (mmscf)	53.3	**1,186.6**
Q4000 Oil recovered (bbls)	8,204	**127,641**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	631	919	1,165	489	0	**3,204**
Barges	456	101	91	29	0	**677**
Other Vessels	1,477	460	402	249	27	**2,615**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**550**
Fixed Wing Aircraft	_	_	_	_	_	**37**
Helicopters	_	_	_	_	_	**76**
Total:	**2,564**	**1,480**	**1,658**	**767**	**27**	**6,496**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	1,668,082	391,950	577,150	389,500	**2,778,522**
Boom Staged	429,853	55,250	107,600	219,900	**812,603**
Ordered					**778,652**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	30	**2,715**
Personnel	_	**42,739**

Image not available for this document, ID: 0.7.19.1955.2

CLAIMS



www.bp.com

Total	$137,878,411

SURFACE / SUBSEA OPERATIONS

671,173
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MISCELLANEOUS

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Received(Date): Fri, 02 Jul 2010 14:56:08 -0400
From: Jane Lubchenco <Jane.Lubchenco@noaa.gov>
Subject: dispersants
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>,William Conner <William.Conner@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>,"ed.levine@noaa.gov" <Ed.Levine@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,"dwh.leadership@noaa.gov" <DWH.Leadership@noaa.gov>

NOAA folks: A subset of the Principals had a conference call this afternoon to discuss dispersant policies and how to move forward. Among other things, we agreed to pull together a short (2-page) synopsis of our knowledge of dispersants (i.e., dispersants writ large, i.e., dispersants, breakdown products of dispersants, and dispersed oil). Focus is on the science, both knowns and unknowns.

NOAA has the lead on this item. It should include:

1. what we know and
2. don't know
3. what the unresolved questions are
4. what monitoring and research is underway (and what have we learned from it to date)
5. should be set in motion asap to resolve the critical unresolved questions
6. what is the biggest potential for regret
7. what alternatives might exist (physically atomizing oil subsurface vs using dispersants to do that)

Principals plan to convene again on Tues or Wed, and I'll need to circulate a document to the others prior to the call.

We already have good syntheses of some of this from our workshop and other efforts. (It would be good to have those summaries as attachments.) But some of the above needs to be drafted de novo.

Dave W: can you please suggest the way forward to accomplish this task?
Many thanks!

Received(Date): Fri, 02 Jul 2010 15:36:52 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: [Fwd: Re: dispersants]
To: DWH leadership <DWH.Leadership@noaa.gov>
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Dr. Lubchenco,

I'm checking with Bill as he had begun to collect the information for next week's hearing testimony with Dr. Robinson. I will work with him, Steve, John Oliver and some of our field SSCs on the initial draft which I hope to put together by tomorrow. On Sunday, I will send the draft to the larger group of NOAA personnel who have been dealing with the dispersant issue for review followed by circulation among NOAA leadership. That should give us Monday to finalize before your meeting on Tuesday/Wednesday. Shelby (with John as back up) will be the war room POCs if we need help with format, assembling attachments, etc.
v/r
Dave

Jane Lubchenco wrote:
>
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> afternoon to discuss dispersant policies and how to move forward.
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Shelby Walker, PhD

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2.1

Received(Date): Fri, 02 Jul 2010 16:33:07 -0400
From: Beth Lumsden <Beth.Lumsden@noaa.gov>
Subject: NOAA Science Briefing July 6th
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: _DWH Science Box <DWH.Science.Box@noaa.gov>,John Oliver <John.Oliver@noaa.gov>, Eric Schwaab <Eric.Schwaab@noaa.gov>,Samuel Rauch <Samuel.Rauch@noaa.gov>, Monica Allen <Monica.Allen@noaa.gov>,Connie Barclay <Connie.Barclay@noaa.gov>
OMAO DWH Aircraft Tasking - Program Impacts 062810.docx
OMAO DWH Ship Tasking - Program Impacts 062810.docx
OMAO_Assets_Gantt_Chart_070210.xlsx
Proposed OMAO Asset DWH Response Schedule 070210.doc
dispersants101.doc

DWH Staff
Please see attached for the NOAA Science briefing for Tuesday July 6th as well as the OMAO asset documents. I am also resending the Dispersant 101 which came out several weeks ago since dispersants are so topical right now. It is moving through the clearance process.

Topics include:

- Air Quality Update
- Loop Current Dynamics
- Protected Species Status
- Seafood Safety Sampling
- Seafood Analysis of PAHs
- NOAA Assets
    - Planes, Vessels and Charters

Thank you to all who have contributed.
I hope all have a wonderful holiday weekend with your family and friends
Beth
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NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

July 1, 2010

** For Internal Use ONLY **

Document ID: 0.7.19.1964

NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

July 1, 2010

** For Internal Use ONLY **

Document ID: 0.7.19.1964.1

Topic Areas

- Air Quality Update
- Loop Current Dynamics
- Protected Species Status
- Seafood Safety Sampling
- Seafood Analysis of PAHs
- NOAA Assets
    - Planes, Vessels and Charters

Air Quality Update

P-3 mission

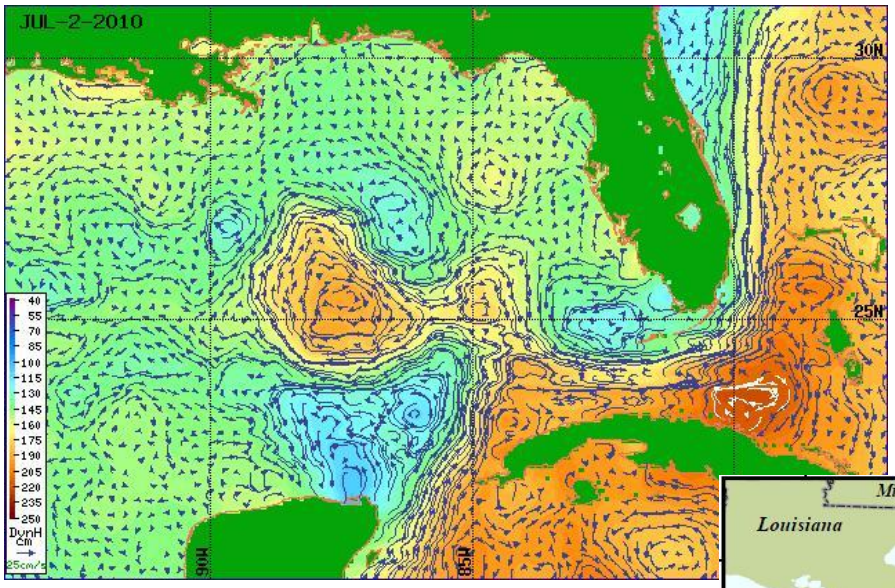
- Mission report (objectives, instrumentation, flight plan) currently in NOAA/DOC clearance for posting to NOAA.gov
- ESRL-CSD working with ERMA to determine most appropriate web posting of QA/QC'd flight data (currently only near-real-time flight data; canister data will be posted when available)
- June 8 mission air canister data received by ESRL/CSD; June 10 air canister analysis still pending at UCI. Backlog due to coincident Gulf, CALNEX, and other efforts.

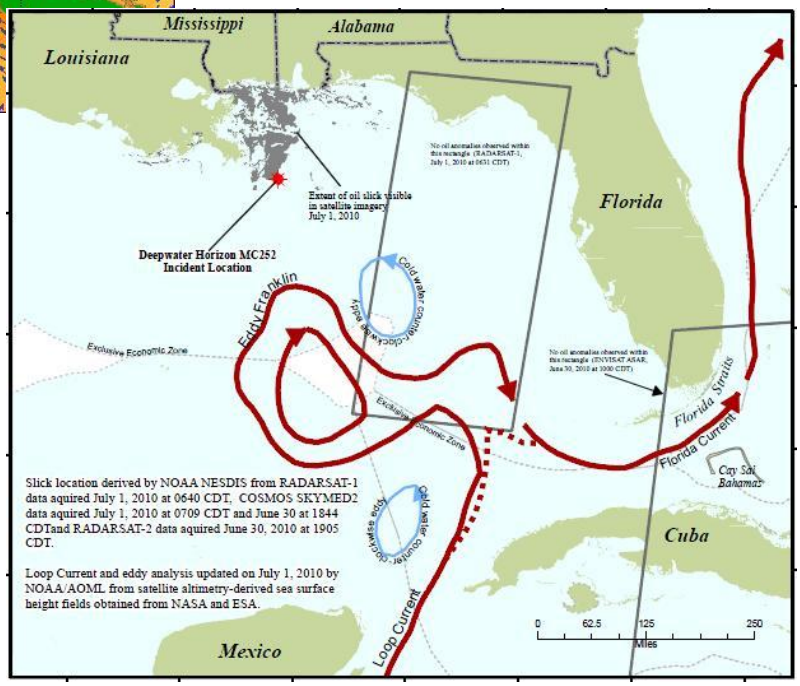
Vessel air chemistry

- Research grade air canisters on the R/V Thomas Jefferson collected air samples in the impacted region in addition to the existing mission sampling plan. Samples shipped back to UCI for analysis.
- Not all canisters were used, so additional canisters will be available for collection of air samples on the next TJ mission in the region of the impacted area.
- Updates on the current and planned NOAA vessel missions has been provided to OSHA for review. Additional discussions will examine where/how OSHA personnel can deploy on NOAA vessels for sampling in the impacted region.

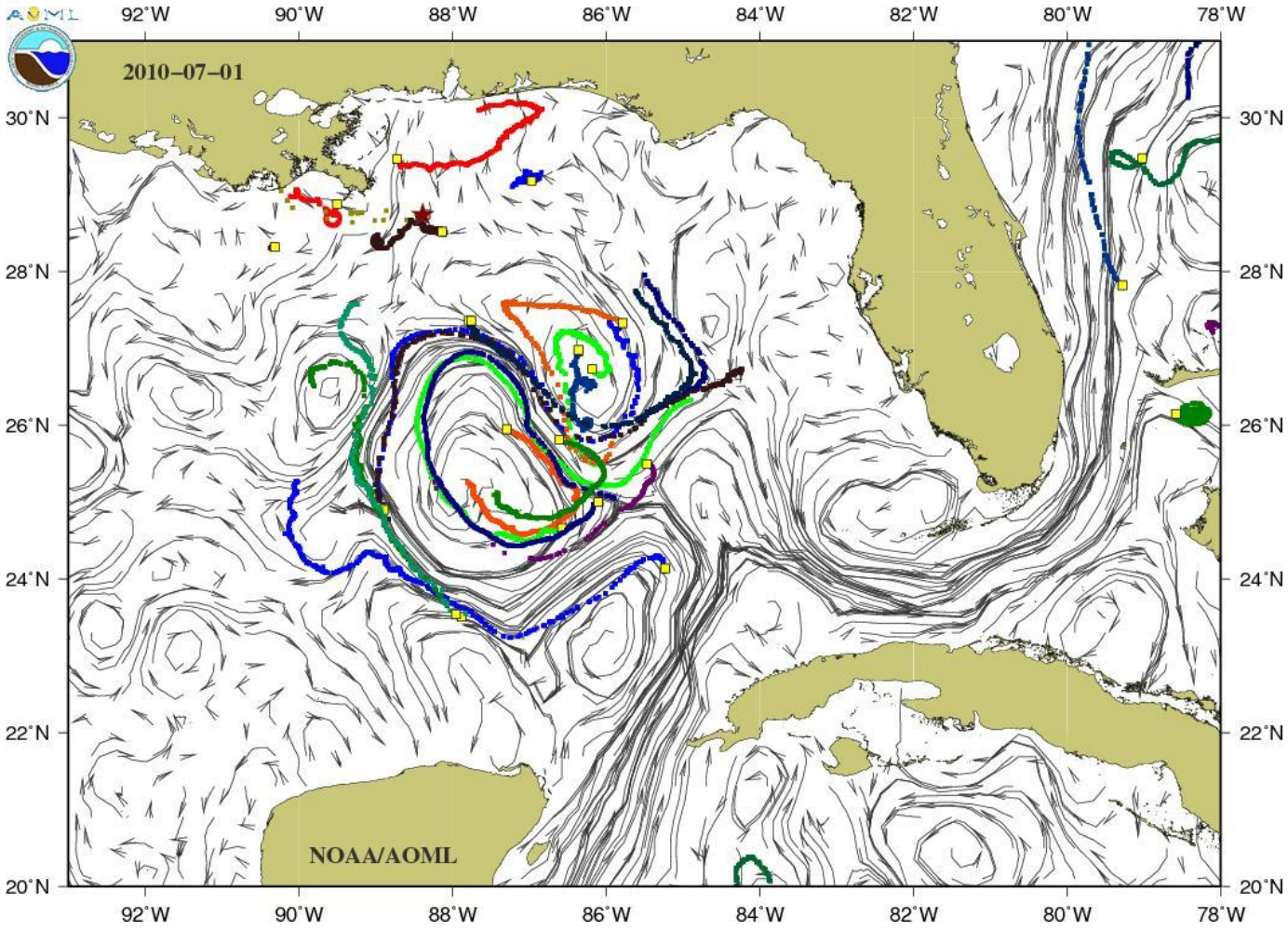
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Loop Current Discussion for July 2, 2010



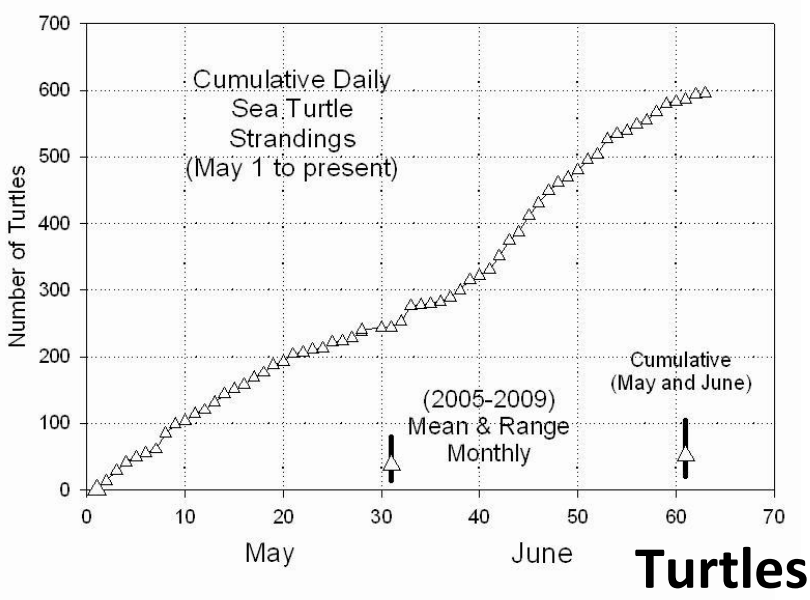


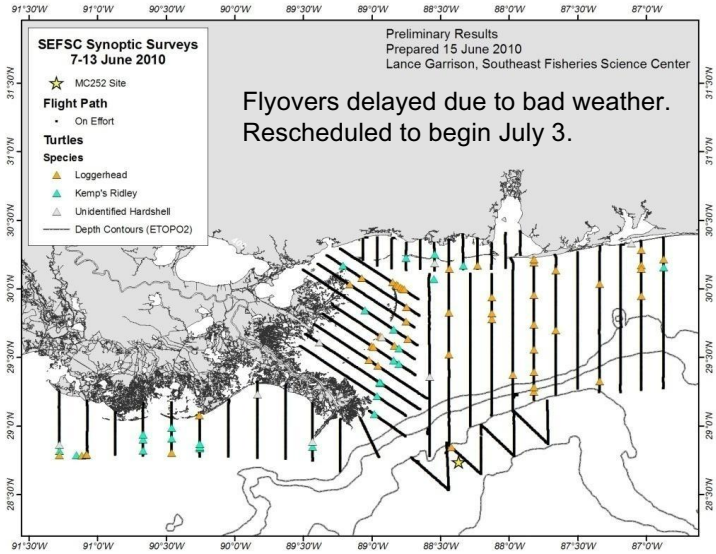
- Continued signs of detachment for Eddy Franklin (EF)
- AOML's Nancy Foster cruise will start assessing connectivity on Saturday, and monitor the waters of the CE in 7 days
- The cyclonic eddy (CE) centered at ~86W 27N is more intense than last week
- Mixing between this CE and EF could cause some of the waters in the CE to be transferred to the LC.
- Net water movement east of this 2-eddy system is to the south.



15 day surface drifter trajectories (starting points indicated by squares)

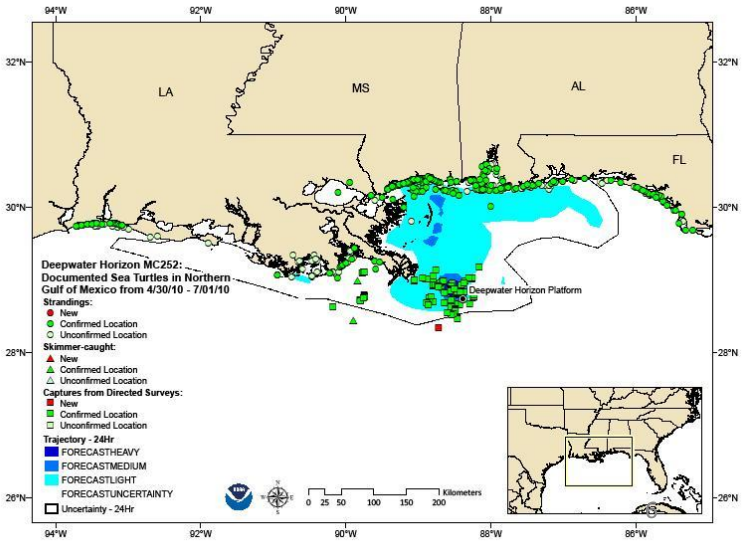
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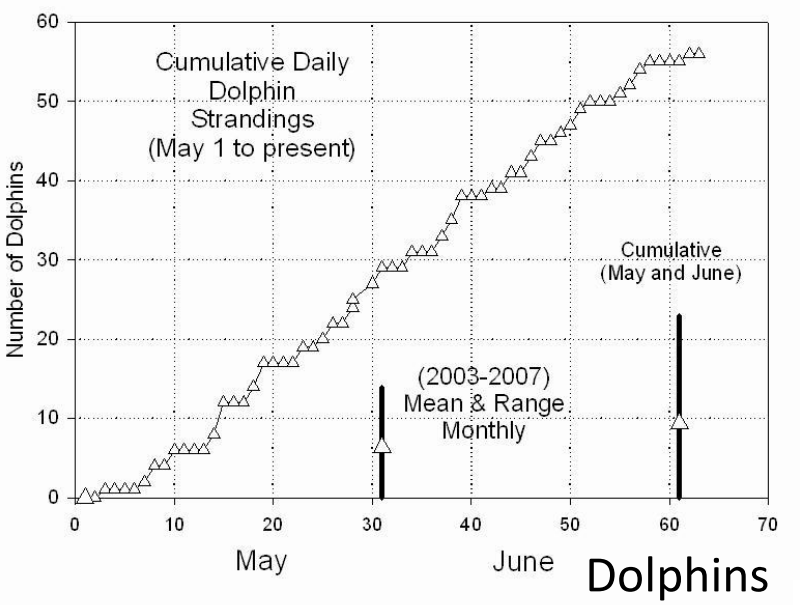


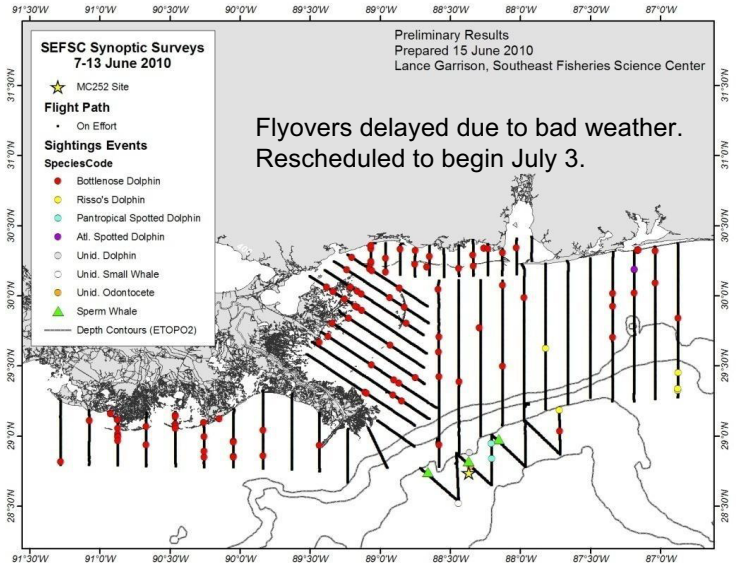


Turtles

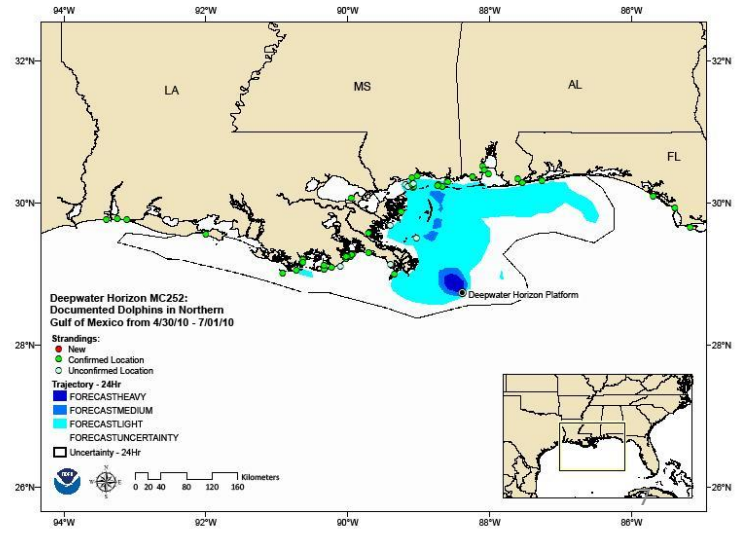
Turtle Status	
Total Verified Stranded Turtles	**595**
Total stranded turtles found dead	441
Total live stranded turtles currently in rehabilitation	143
Total live stranded turtles that died in rehabilitation	7
Total live stranded turtles released	4
Turtle Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	59
Verified strandings but animals not collected due to stage of decomposition or unable to recover	46
Carcasses to be necropsied, if decomposition stage warrants	319







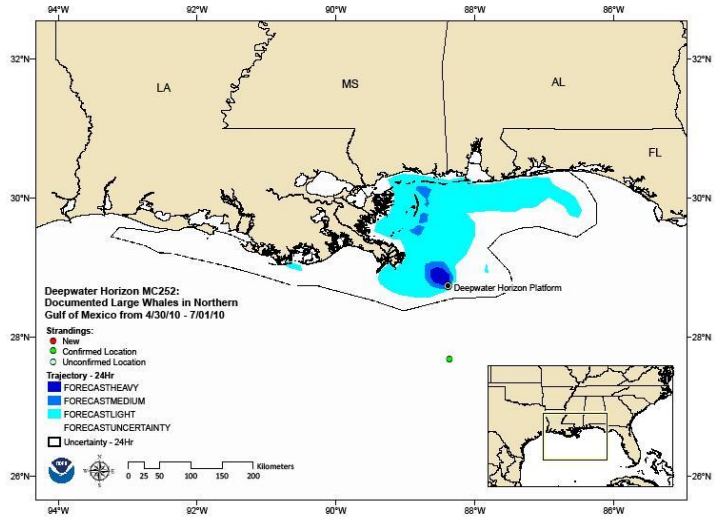
Dolphin Status	
Total Verified Dolphins	**56**
Total dead stranded dolphins	51
Total live dolphins currently in rehabilitation	1
Total live dolphins stranded that died in care	3
Total live released dolphins	1
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	27
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	7
Number of full necropsies performed	11
Verified strandings but animals not collected due to stage of decomposition or unable to recover	5
Carcasses to be necropsied, if decomposition stage warrants	4

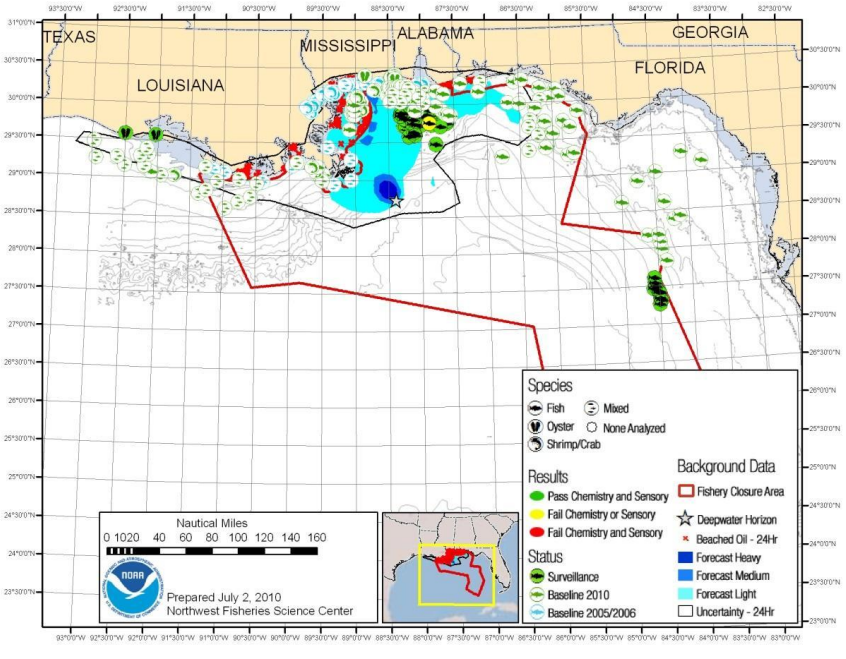


Whales

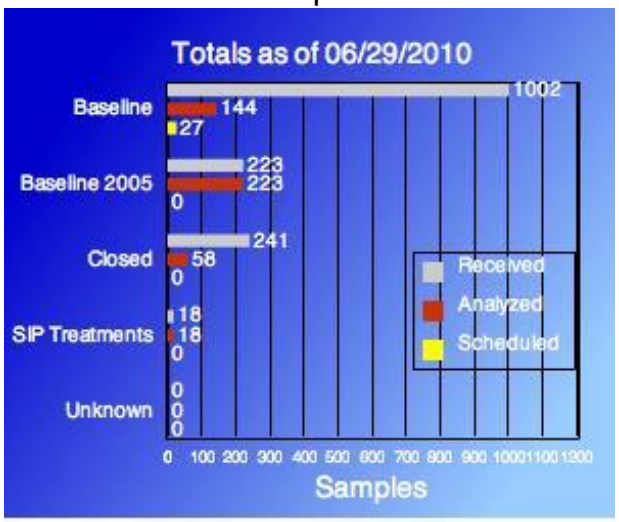
- The NOAA Ship *Pisces* reported a dead 25 ft sperm whale located 150 miles due south of Pascagoula, MS on June 15, 2010.
- The whale was decomposed and heavily scavenged by sharks.
- There was no oil in the vicinity.
- The whale was photodocumented, sampled (skin/blubber, external swab), and marked with blue paint to reduce resighting/resampling.
- NOAA and the Unified Command Wildlife Branch have had numerous reports of sperm whales sighted swimming in the oil, but this is the first confirmed report of a dead whale since the Deepwater Horizon oil spill began.
- Sperm whales are the only endangered resident cetacean in the upper Gulf of Mexico. Their prime habitat and feeding area are in the upper Gulf offshore area, they feed and live at depth in areas where undersea and aerial dispersants and oil have been present for many weeks, and they feed on deepwater squid which may also be impacted by the oil and dispersants.
- The NOAA Ship *Gordon Gunter* is currently on a multi-week cruise to do photo-identification, assessments, and biopsy of sperm whales, Bryde's whales, and other offshore cetaceans as well as to tag sperm whales and Bryde's whales and to conduct prey density studies.

Whale Status	
Total Verified Whales	**1**
Total dead stranded whales	1
Total live whales currently in rehabilitation	0
Total live whales stranded that died in care	0
Total live released whales	0
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	0
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	0
Number of full necropsies performed	0
Verified strandings but animals not collected due to stage of decomposition or unable to recover	1
Carcasses to be necropsied, if decomposition stage warrants	0





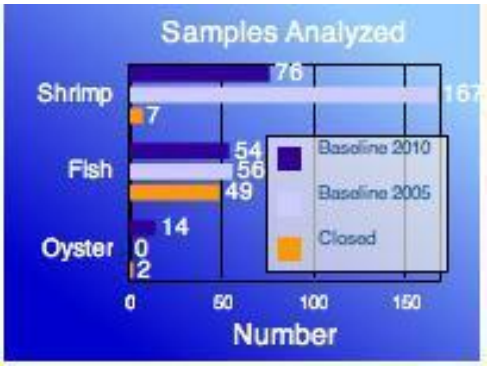
Seafood samples: Status



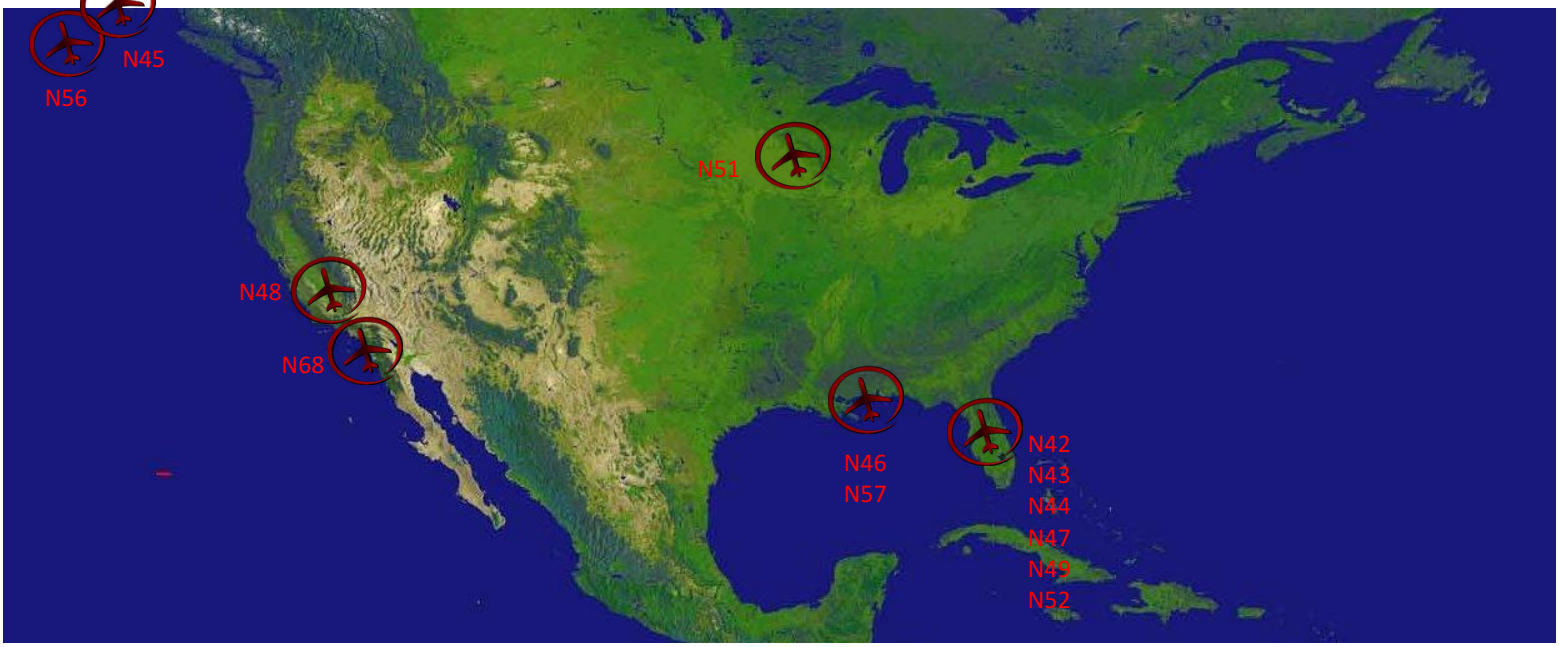
"Received" bar represents all field samples sent to NWFSC from NSIL. Red are samples for which we have chemical results, and yellow are samples scheduled for analysis. Samples are prioritized for analysis based on species, location and status. Closed area samples receive highest priority and are all analyzed.

July 2, 2010

- GC/MS analysis of a high priority set of fish from closed area off Florida will be completed today and undergo QA/QC review over the weekend.
- 26 fish and shellfish are currently undergoing QA/QC review.
- Seafood samples received from Pascagoula, MS today are undergoing chain-of-custody check-in at the NWFSC.
- Additional fish and shellfish samples continue to be processed for chemical analysis.

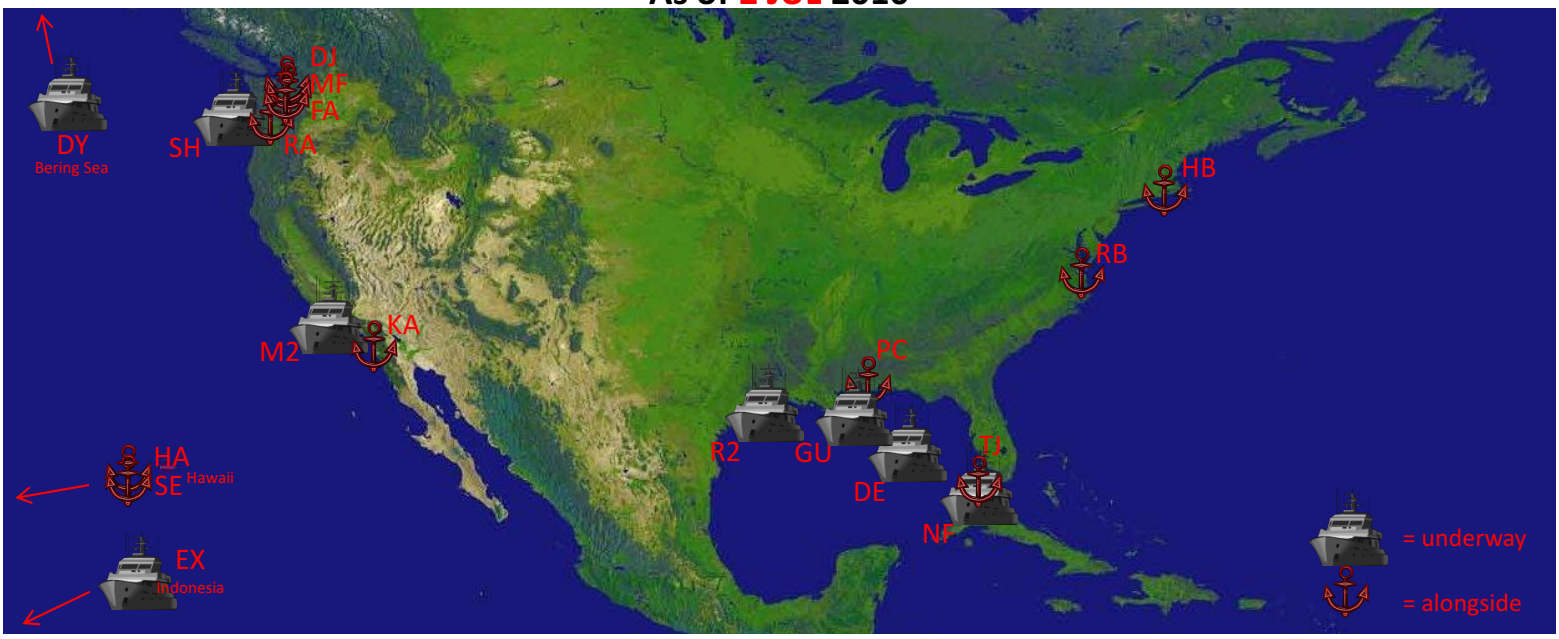


NOAA Aircraft Positions
As of 2 JUL 2010



ID	Type	Status Today
N42	P-3	Maintenance, MacDill AFB
N43	P-3	No flights scheduled, MacDill AFB
N44	P-3	Maintenance, MacDill AFB
N45	Turbo Cmdr	GRAV-D, Anchorage, AK
N46	Twin Otter	Arrived in Mobile, AL to support DWH ops
N47	Shrike	No flights scheduled, MacDill AFB
N48	Twin Otter	CALNEX, Ontario, CA
N49	G-IV	No Flights Scheduled, MacDill AFB
N51	Shrike	No Flights Scheduled; Chanhassen, MN
N52	Citation	In disposal process, MacDill AFB
N56	Twin Otter	Marine mammal survey, Adak, AK
N57	Twin Otter	Arrived in Mobile, AL to support DWH ops
N68	King Air	Northern Mexico earthquake damage assessment, San Diego, CA

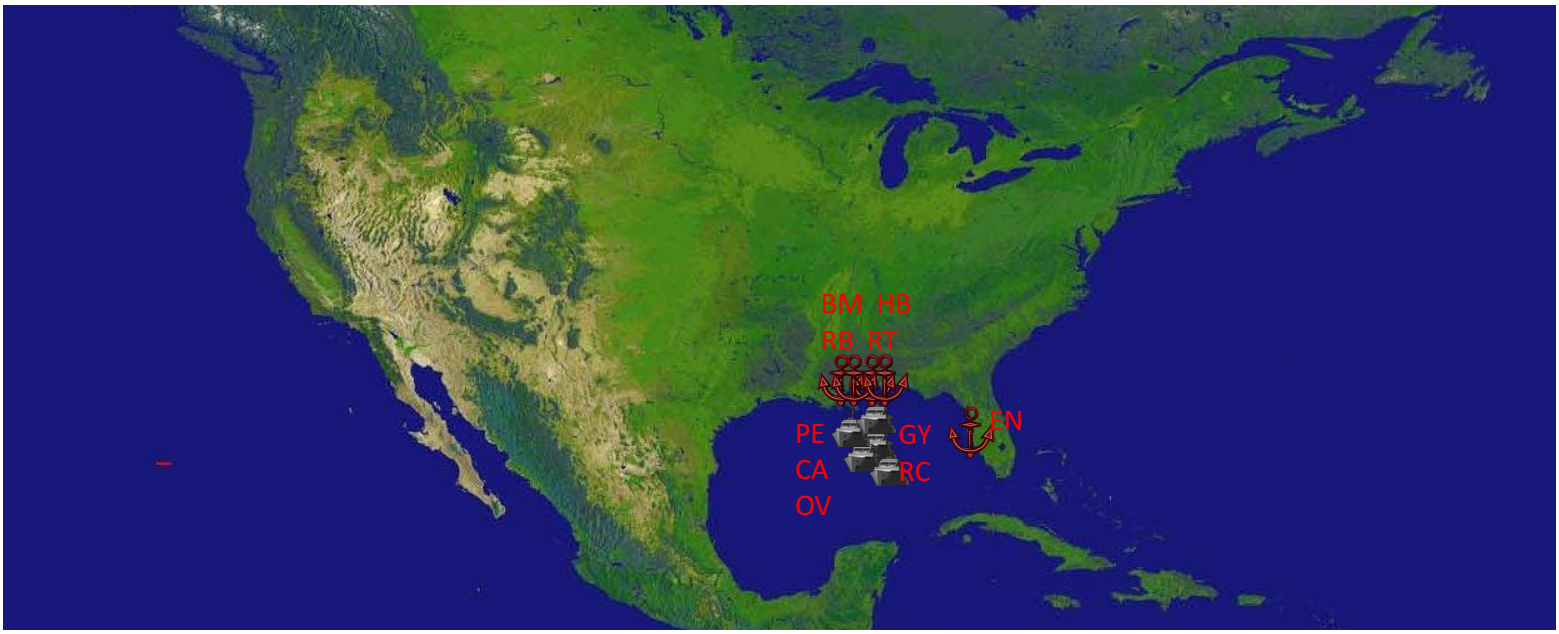
NOAA Ship Positions
As of 2 JUL 2010



IDS	Status Today
FA	Alongside Seattle, WA. Departure 07/07 for scheduled project
SH	Underway on scheduled project. Arrival 7/9 Eureka, CA
MF	Delayed in Seattle, mechanical problems. Departure NET 7/3
DY	Underway on scheduled project. Arrival 7/14 Dutch Harbor, AK
HA	Alongside Pearl Harbor, HI. Departure 7/21 for scheduled project
M2	Underway on scheduled project. Arrival 7/4 San Francisco, CA
SE	Alongside Pearl Harbor, HI. Departure 7/6 on scheduled project
KA	Alongside San Diego, CA. Departure 7/8 on scheduled project
RA	Alongside Cascade Shipyard, Portland, OR for major repair period
DJ	Alongside Seattle, WA. Decommissioning on week of 8/2
EX	Underway on scheduled project. Arrival 7/14 Bitung, Indonesia

ID	Status Today
DE	Underway on DWH Seafood Safety survey. Arrival 7/10 Key West, FL
TJ	Alongside Key West, FL. Departure 7/7 for scheduled hydro survey project
HB	Alongside Newport, RI. Departure 7/7 for sea trials
NF	Underway on DWH Loop Current characterization. Diplomatic clearance for Cuba/Mexico in processing. Arrival 7/13 Pascagoula, MS
RB	Alongside Norfolk, VA. Shipyard repair contract ends 8/13
GU	Underway on DWH Marine Mammal Assessment Leg 2. Arrival 7/9 Pascagoula, MS
PC	Alongside Pascagoula, MS. Departure 7/7 for scheduled project
R2	Underway on scheduled project. Arrival 7/17 Pascagoula, MS

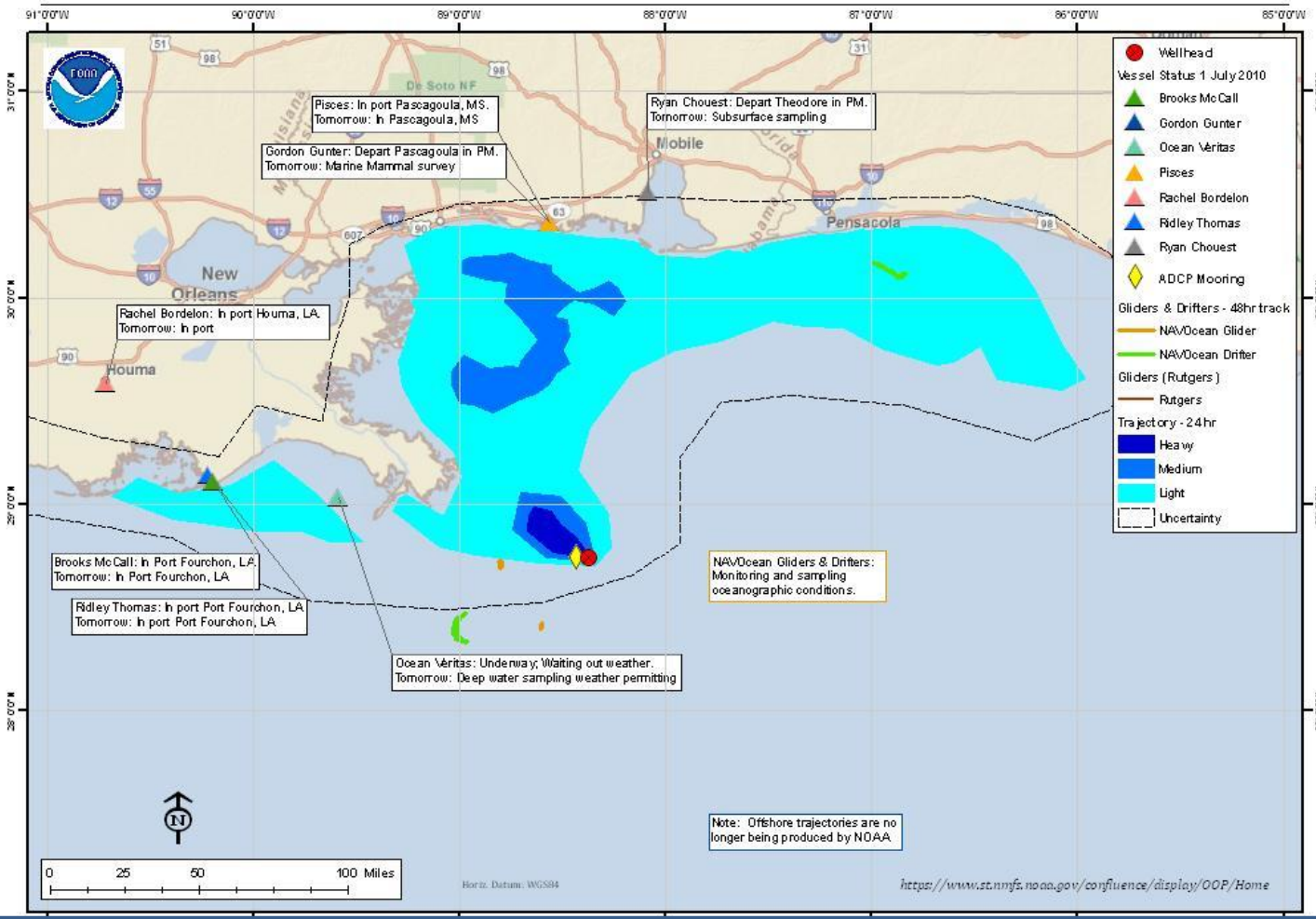
Chartered Ship Positions
As of 2 JUL 2010



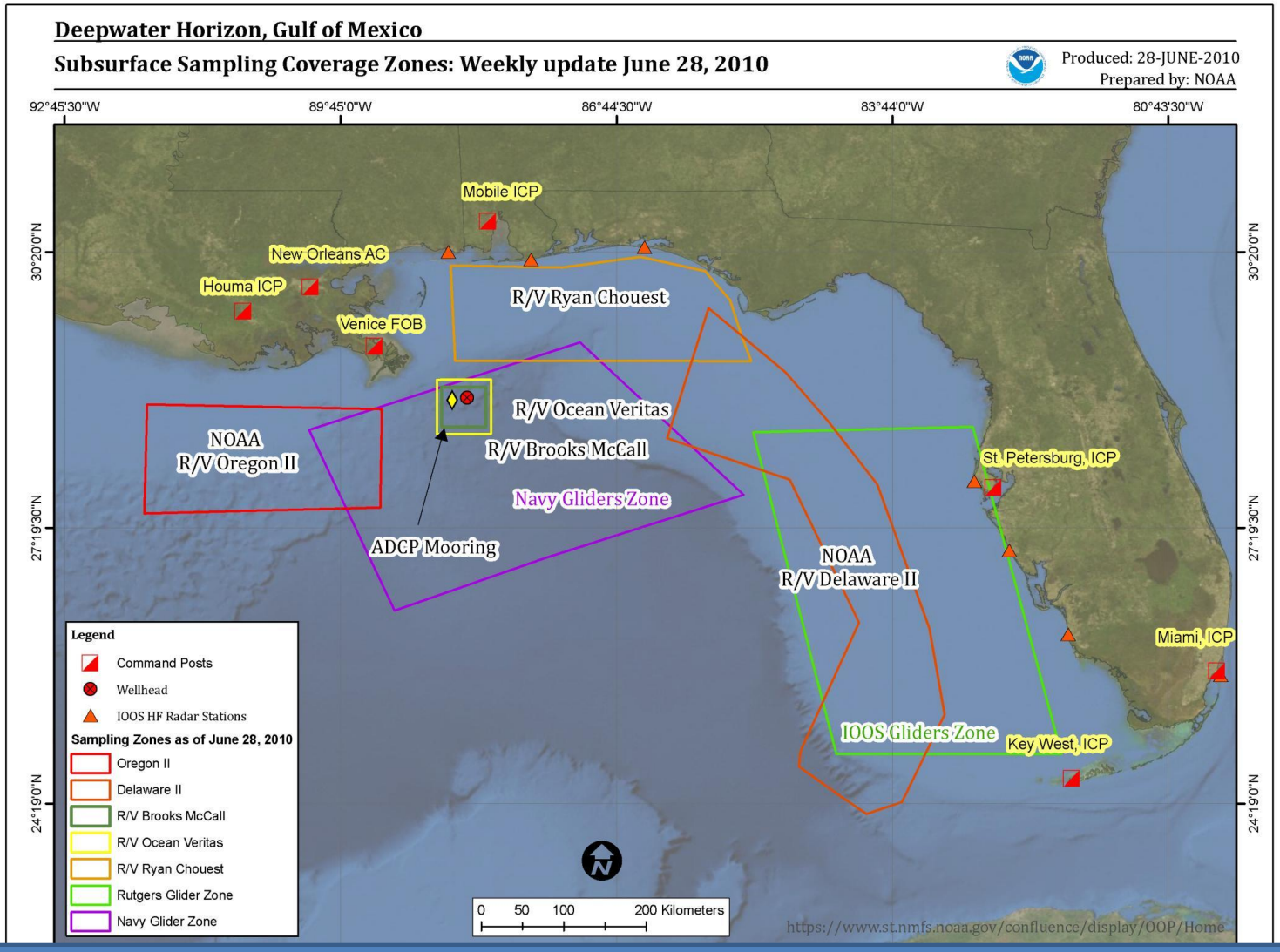
ID	Type	Status Today
BM	M/V Brooks McCall	In port Fourchon, LA
EN	R/V Endeavor	In port St. Petersburg, FL
GY	R/V Gandy	Reef fish surveys out of Panama City, FL.
CA	R/V Caretta	DHW began 21 June. No end date for DWH response identified.
HB	R/V Harold B	Alongside in Port Fouchon for yard period. Will be working out of Panama City.
OV	M/V Ocean Veritas	Conducting water sampling operations
PE	R/V Pelican	Loop current study for MMS scheduled to begin 6/27
RB	OSV Rachel Bordelon	In port Houma, LA
RT	M/V Ridley Thomas	In port Fourchon, LA
RC	OSV Ryan Chouest	Conducting water sampling operations

Date: 1-July-2010 | Subsurface Monitoring Ship Locations | NEARSHORE

Preliminary findings based on daily communication between assets and Subsurface Monitoring Unit | Deepwater Horizon, Gulf of Mexico



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Monitoring+Ship+Locations



https://www.st.nmfs.noaa.gov/confluence/display/OOP/Subsurface+Coverage+Zones

Subsurface Monitoring Vessel Assignments

Vessel Assignments for July 02, 2010 to July 04, 2010

Vessel - MMSI	*Type*	*Complement*	*July 02, 2010*	*July 03, 2010*	*July 04, 2010*
Brooks McCall 338257000	162 ft M/V	32	In Port Fourchon	In Port Fourchon	Depart Port Fourchon
Delaware II 200319187	155 ft R/V	32	Longline fishing and water sampling	Longline fishing and water sampling	Longline fishing and water sampling
Gordon Gunter 303913000	224 ft R/V	33	Marine Mammal Survey	Marine Mammal survey	Marine mammal survey
Nancy Foster	187 ft R/V	37	Sampling off of Key West	Sampling off FL	Sampling off FL
NAVOcean Sea Gliders	2 AUV's		Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions	Monitoring and sampling oceanographic conditions
Ocean Veritas 367116090	194 ft M/V	41	Conducting water sampling ops	Conducting water sampling ops	Conducting water sampling ops
Oregon II	170 ft R/V	31	Inport Galveston, TX	Inport Galveston, TX	In port Galveston, TX
Pisces 369970145	209 ft R/V	38	In port Pascagoula, MS	In Pascagoula, MS	In Pascagoula, MS
Rachel Bordelon 367359570	150 ft OSV	20	In port Houma, LA	In port	In port
Ridley Thomas 538002534	200 ft M/V	36	In port Port Fourchon, LA	In port Port Fourchon, LA	In port Port Fourchon, LA
Rutgers and USF Sea Gliders	3 AUV's		Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys	Monitoring FL coastal waters from Tampa to the Keys
Ryan Chouest 366237000	215 ft OSV	27	Conducting water sampling ops	Conducting water sampling ops	Conducting water sampling ops
Thomas Jefferson 369958000	208 ft R/V	33	Arrive Key West, FL	Inport Key West, FL	Inport Key West, FL

https://www.st.nmfs.noaa.gov/confluence/display/OOP/Daily+Vessel+Call+Notes

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OMAO Assets (as of 7/2/10)

	Jul	Aug	Sep	Oct	Nov
N42 WP-3D	Hurricane Season				
	Next Gulf Loop Current flight scheduled for 7/7				
N43 WP-3D	Phase Maintenance	Hurricane Season			
N46 Twin Otter	DWH Multi Spectral Oil	Fuel Tank / Maintenance	BOWFEST	Engine Overhaul	
N48 Twin Otter	CALNEX	DWH Multi Spectral Oil	BWASP		Corrosion Inspection
N56 Twin Otter	Steller Sea Lions	Harbor Seals	Leatherback Turtles	Autopilot Maintenance	
N57 Twin Otter	DWH Marine Mammal Surveys			NERW	
N68 King Air	National Coastal Mapping Priorities				
Bigelow	Cetacean Abundance	Mapping	Bottom Trawl		
Delaware II		ECOMON	Atl. Herring		
	Underway on DWH Seafood Safety survey. Arrival 7/10 Key West, FL				
Brown	Shipyard / Trials / Fleet Inspection		Tsunami/Trop. Atl		
Foster	DWH Loop Current	DWH Corals	FGBNMS/Reg Assmt/Seafloor/Lionfish/Norfolk Canyon		
	Underway on DWH Loop Current characterization. Diplomatic clearance for Cuba/Mexico in processing. Arrival 7/13 Pascagoula, MS				
Gunter	Marine Mammals	F.I.	Fall Plankton		
	Underway on DWH Marine Mammal Assessment Leg 2. Arrival 7/9 Pascagoula, MS				
Jefferson	Key West		Chesapeake Bay		
	Alongside Key West, FL. Departure 7/7 for scheduled hydro survey project				
Oregon II	Groundfish	Longline Shark / Red Snapper			
	Underway on scheduled project. Arrival 7/17 Pascagoula, MS				
Pisces	SEAMAP Reef Fish	South Atlantic Reef Fish - TBD			
	Alongside Pascagoula, MS. Departure 7/7 for scheduled project				

NOAA Line Office Assets

	Jul	Aug	Sep	Oct	Nov
R/V HST	NOAA Small Boat suitable for coastal day trips. Currently alongside Pascagoula and available.				
R/V Gandy	NOAA Small Boat conducting reef fish surveys out of Panama City, FL.				

3/29/2011

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R/V Caretta					
	NOAA Small Boat alongside Pascagoula. DHW begin 6/21.				
R/V Harold B					
	Scheduled to conduct trap/video surveys out of Panama City the reamainder of the month.				
25' Parker					

Document ID: 0.7.19.1964.4

25' Parker	NOS small boat w/ twin outboards in Charleston, SC, available for deployment and trailerable			

Other Assets

	Jul	Aug	Sep	Oct	Nov
Beau Rivage	No update 7/2				
Brooks McCall	In port Fourchon, LA				
Bunny Bordelon	No update 7/2				
Capt Hatteras	No update 7/2				
Endeavor	In port St. Petersburg, FL				
Jack Fitz	No update 7/2				
Ocean Veritas	Conducting Water Sampling Operations				
Pelican	LOOP current study for MMS scheduled to begin 6/27				
Rachel Bordelon	In port Houma, LA				
Ridley Thomas	In port Fourchon, LA				
Ryan Chouest	Conducting Water Sampling Operations				
Walton Smith	No update 7/2				
IOOS Gliders	Monitoring for oil in Florida coastal waters from Tampa to FL Keys.				
NAVO Gliders	Monitoring and sampling oceanographic conditions				

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Proposed NOAA Asset DWH Response Schedule

SHIPS				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
Oregon II	June 21	July 5	Rd-10-01 Summer groundfish Leg 2 loses 9 DAS (much of area typically surveyed during this project is likely going to be off limits due to the oil.)	ETD for sea trials 06/20. ETD Pascagoula, MS 6/23 for DWH shrimp trawl/ichthyoplankton survey (approx 4-5 days), then resume scheduled work. ETA Galveston 06/30.
Delaware II	June18	tbd	DE-10-05 Benthic Habitat	Underway en route GOMEX for DWH ops (seafood study). Arrival Key West, FL 06/24 for staging. Departure 06/25
Foster	July 5	July 18	NF-10-07 Tortugas Eco Reserve loses all 7 DAS	Allows 2 weeks for z-drive repairs alongside in Pascagoula
Gunter	July 18	August 4	GU-10-02 Marine Mammals, Leg 3 – lose 14 DAS. Currently this project is scheduled for Atlantic Ocean, but there are discussions of moving this effort to the Gulf instead. If project remains in Atlantic, GU isn't an option	GU would have to resupply fresh water one time during this mission period
Pisces	August 5	September 3	PC-10-04 CoOp Reef Fish Survey loses 23 DAS	This 30 day mission would have to be broken into 2 or 3 legs w/ T&Gs for water
Oregon II	September 3	September 28	Rd-10-02, Shark/Snapper Longline loses all of Leg 4 and most of Leg 3. Estimate losss of ~20 DAS. However, much of the project's survey area is impacted by oil	This 26 day mission would have to break into 2 or 3 legs for water and reprovisioning

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Aircraft				
Asset	**Start Date**	**End Date**	**Impacted Projects**	**Comments**
N42RF WP-3D		tbd	Hurricane Season	Gulf Loop Current flights could be rescheduled around any tasking for Hurricanes. Hurricane taskings would delay Gulf Loop Current flights by several days.
N46RF Twin Otter	April	July 23	Alaska Marine Mammal Surveys	Extending Multi Spectral Oil Analysis flights beyond June 15 will impact Alaska Marine Mammal surveys. Additionally, engine overhaul date will be accelerated due to increased utilization and installation of extended range fuel tank will be delayed.
N48RF Twin Otter	July 23	August 30	Alaska Marine Mammal Surveys	N48RF to relieve N46RF upon completion of CALNEX project. BWASP project begins in Alaska in early September
N57RF Twin Otter	June 7	September 30	Northeast Right Whale	DWH Marine Mammal flights tasking resumed June 7. Anticipated schedule is approximately 5 flights every 14 days.
N68RF King Air	April	September 30	National Coastal Mapping Priorities	Risk of not meeting GPRA goals for shoreline mapping.

What are dispersants? Dispersants are mixtures of chemicals that include active ingredients together with solvents and other additives that facilitate their use and effectiveness. The most abundant dispersants used so far in the Gulf of Mexico are Corexit 9500 and Corexit 9527. The main differences between these are in the component solvents and other additives; Corexit 9527 is a more water-miscible preparation, whereas Corexit 9500 uses petroleum distillates as solvents (much like latex paint vs. "oil-based" paint). The active chemicals in dispersants are actually detergents that are "amphiphilic", that is, they have both water-attractive (hydrophilic) and oil- or lipid-attractive (lipophilic) properties. The amphiphilic properties of these detergents makes them useful for breaking down oil sheens on the water surface, or large aggregates of oil under the water, into much smaller microdroplets. Common dish detergents work by the same principle.

Why are dispersants used? The primary objective in oil spill response is to physically remove the oil, but this option may not be possible given the scale or operational conditions for some spills. Dispersants are used to reduce the risk of oiling to surface dwelling animals (birds, marine mammals) and coastal habitats (shoreline, wetlands). Dispersion transfers this risk from the surface to the subsurface, usually to the top ~ 10 meters of the water column. Many important species occupy this zone (plankton, fish), so the decision to use dispersants is usually a question of tradeoffs to minimize the overall ecological impacts of a spill.

What is the toxicity of the active ingredients in dispersants? The detergent components of dispersants are no more toxic than household detergents. Moreover, one of the detergents in Corexit products (Tween 80; sorbitan mono-(9Z)-9-octadecenoate) has been approved by the U.S. Food and Drug Administration as a food and pharmaceutical additive. Detergents will likely irritate the eyes and mucous membranes lining the airways of turtles, dolphins, birds, humans, and other large animals. However, they would have to be ingested in very large amounts to be systemically toxic. Smaller animals with shells (crabs, shrimp) or scales (fish) should be relatively well protected from the external effects of detergents. Marine life without a hard shell or scales (e.g., soft corals, jellyfish, marine bacteria, etc.) could be more susceptible to damage by detergents in dispersants due to their lipophilic properties. Lipophilic chemicals such as detergents and petroleum hydrocarbons in crude oil can break down or "dissolve" unprotected cell membranes. In the same way, the detergents may be toxic to specialized cells in larger animals that are directly exposed to the surrounding marine environment. These include, for example, olfactory sensory neurons in a fish's "nose" that are protected only by a thin layer of mucous.

What is the toxicity of other components of dispersants? The solvents and other additives in dispersants have potentially toxic properties that are independent of the detergent components and also less well characterized. The identity of these compounds is in many cases proprietary (i.e., confidential business information) and therefore unknown to the general scientific community. One of the proprietary organic solvents used in Corexit products can be neurotoxic to humans if inhaled. However, for birds and marine life, the toxicity of the solvents and additives in dispersants is largely untested and therefore poorly understood.

What do we know about the effects of dispersant/oil mixtures? The application of

dispersants to crude oil can increase the hydrocarbon exposure risk for fish, shrimp, oysters, corals, and other species. Dispersants break oil masses down into smaller droplets. This causes more hydrocarbons from surface slicks and subsurface plumes to enter the water column where they can be more readily taken up by marine organisms. This increased uptake, or "bioavailability", of dispersed hydrocarbons has been shown for several different marine species. However, the different processes governing the uptake and effects of dispersed oil have not been studied in detail. For example, it is not known how very small, sub-microscopic detergent-oil complexes interact with gills, sensory neurons, and other types of surface membranes. It is important to note that while exposure risk to water column species may be greatly increased over the short term, over the longer term factors that can reduce overall exposure risk can also come into play, such as dilution and increased microbial activity in association with smaller oil particles.

Received(Date): Sat, 03 Jul 2010 02:14:40 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 2 2010
image001.emz
oledata.mso

Highlights

ξ **Relief Wells Technical Update** – The *Development Driller III*, drilling the first relief well, has drilled ahead to 17,446 feet and completed its fourth "ranging" run. A fifth and sixth ranging run are planned. Ranging will enable the drilling team to precisely locate the Macondo well bore and ultimately drill directly into it. A video overview on the progress of the relief wells and an explanation of the bottom kill procedure is now available on the BP website at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

ξ **Claims Update** – 1200 people are working on claims teams and 35 offices are open across the Gulf Coast, with translation capability in 9 offices. The average time from claim to check is 4 days for individuals, about 8 days for businesses. BP is working with Ken Feinberg and team to establish an Independent Claims Facility (ICF). It is anticipated that the ICF will assume all responsibility for claims sometime in August. Until such time as ICF begins to assume responsibility for claims and claim policies, there are no immediate changes to the process. Claimants should continue to follow instructions and use materials found at www.bp.com/claims. Claims offices and adjusters will remain open and will continue processing claims and monthly advances as usual until such time as new protocols for claims processing under the ICF are finalized.

Offshore – Containment and Surface Response

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,446 feet below sea level and within 100' feet of the Macondo well bore.

Work has progressed to the "ranging" stage where special tools are run into the well to precisely locate the MC252 casing. *For a detailed explanation of this process, visit BP's website* at:
http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039

ξ The second relief well (work being performed by *Development Driller II*) has drilled to 13,792 feet below sea level and is proceeding to 13,873', the next casing point. Drilling began on May 16.

Containment and Recovery

- Lower Marine Riser Package (LMRP) Cap – Approximately 16,198 barrels of oil have been captured through the LMRP cap during the last 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared.
- Near Term Containment: Q4000 Direct Connect – This containment system is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Approximately 8,236 barrels of oil were flared.
- Over the past 24-hour period, 57.1 million cubic feet of natural gas were flared from the Enterprise and the Q4000.
- Long Term Containment: Permanent Riser Systems – A floating riser containment system will be connected to the *Helix Producer* vessel in early July. This system, which will collect oil from the top of the blowout preventer, is able to disconnect from the ship during a hurricane. A second floating riser system has been fabricated to be connected to the *Toisa Pisces* producer vessel. That ship is in a staging area. It is anticipated that this second system will be available in July.
- Long Term Containment: *Discoverer Clear Leader* – A third ship, the *Clear Leader* is at the staging area and a connection system is being designed to provide additional flow containment to this ship. Mobilization of some parts of this system is expected in July.
- Once fully deployed, around the middle of July, the Long Term Containment systems are designed to collect between 60-80,000 barrels of oil per day. More information on the containment systems, including a June 18 visual slide pack, can be found in the "Technical Update" section on BP's website at:
http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

-

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. https://www.fbo.gov/index?s=opportunity&mode=form&id=6b61794cf96642c8b03fcf9e0c3083eb&tab=core&_cview=1

State Summaries: Operations, Shoreline Impact & Claims

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

LOUISIANA

-

Offshore: Skimming operations were halted due to sea state. No burn operations were possible due to increased sea state.

Shoreline: Branches are preparing resource for rapid response to likely oiling in several locations from St. Bernard Parish to Grand Isle. Continued operations throughout Barataria Bay, South Pass and Grand Isle. Most branches on weather stand-down.

Inshore: 12 fishing vessel skimming Task Forces are currently stood down pending improved weather conditions. 27 Shallow Water Barge Skimming Systems are also stood down in 5 different parishes. 4 skimming vessels attempted recovery for several hours at Lafourche before returning.

Wildlife: 229 wildlife specialists utilized 4 helicopters, 74 boats, and 7 airboats to search for and recover oiled birds. 78 birds expected to be released in Brunswick, GA.

Air Operations: 5 dispersant flights dispersing 17,852 gallons North of the Source.

Boom: Deployed 2,700' hard boom in last 24 hrs.

Parish	Claims Paid	Parish	Claims Paid
Jefferson	$13,441,213	Ascension	$118,983
Terrebonne	$13,301,514	Webster	$116,777
Plaquemines	$12,816,482	Saint Landry	$103,523
Lafourche	$8,053,306	Jefferson Davis	$91,450
Saint Bernard	$5,309,502	Saint James	$72,150
Orleans	$3,877,867	Acadia	$68,350
Saint Tammany	$3,467,051	Beauregard	$65,700
Vermilion	$2,168,363	Ouachita	$60,461
Calcasieu	$1,570,435	Pointe Coupee	$51,725
Saint Charles	$1,526,268	Rapides	$42,457
Saint Mary	$1,285,463	Concordia	$39,387
Iberia	$1,223,278	East Feliciana	$28,924
Lafayette	$818,607	West Baton Rouge	$28,000
Cameron	$757,600	Iberville	$20,876
Tangipahoa	$679,000	Caddo	$20,804
East Baton Rouge	$479,574	Saint Helena	$20,500
Livingston	$328,639	Union	$20,000
Saint John the	$180,410	Allen	$1

Baptist				5,000	
Saint Martin	$145,800		Evangeline	$12,500	
Washington	$143,350		Bossier	$7,175	
Assumption	$137,750		Other Parishes	$924,816	
Avoyelles	$89,100		**Total Louisiana**	**$73,789,059**	

MISSISSIPPI

Shoreline: Conducted manual beach cleanup at Biloxi Beach. Conducted night operations in Harrison County. Team participated in mandated Utility Terrain Vehicle training to facilitate operations. Finalized planning stage to gain night operations on barrier islands.

Nearshore: Suspended all nearshore operations due to weather. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time. VOO training conducted in Pascagoula.

Offshore: Weather hampered skimming operations.

Boom: Magnolia Project Operations suspended due to inclement weather. Boom gates at Biloxi Bay, Pascagoula Bay and St. Louis Bay remained closed and will be tended by VOO. Deployed 3,100' hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Harrison	$7,390,874	Lawrence	$24,500
Jackson	$3,581,047	Madison	$23,342
Hancock	$2,163,264	Rankin	$20,369
Pearl River	$231,470	Hinds	$18,878
Stone	$208,364	Jones	$17,149
George	$151,270	Lincoln	$15,000
Lamar	$107,065	Clarke	$12,500
Forrest	$54,820	Washington	$12,343
Marion	$46,000	Greene	$10,000
Pike	$42,400	Other Counties	$502,148
DeSoto	$28,807	**Total Mississippi**	**$14,661,610**

ALABAMA

Shoreline: Heavy oil impact in Baldwin and Mobile Counties. Heavy tarball impact on Pelican Island and east end of Dauphin Island. West Point Island operations suspended until Saturday due to rough surf. Baldwin County response was hampered due to weather; however, strike teams remained on site.

Nearshore: Suspended most nearshore operations due to weather. Limited number of vessels engaged oil in between weather systems. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time.

Offshore: Utilized weather delays for safety stand-down and replenishment of consumables.

Boom: Boom deployed around USS Alabama and around interior islands in Mobile Bay. Conducted boom training for VOO task forces during down time at Orange Beach. Deployed 850’ hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Mobile	$15,683,291	Escambia	$46,066
Baldwin	$10,692,712	Marengo	$38,606
Jefferson	$122,482	Washington	$32,855

Monroe	$121,920	Wilcox	$29,210
Montgomery	$87,340	Walker	$25,000
Covington	$62,500	Lee	$24,183
Clarke	$61,075	Dale	$21,601
Tuscaloosa	$60,364	Houston	$19,696
Madison	$58,900	DeKalb	$17,400
Shelby	$57,973	Other Counties	$587,940
Etowah	$48,677	**Total Alabama**	**$27,904,790**

FLORIDA

Shoreline: Continued mechanical and manual cleanup on Pensacola Beach in between weather systems. Conducted manual cleanup in Okaloosa, Walton and Bay Counties. Safety and operations refresher training conducted throughout the region during down time.

Nearshore: Suspended all nearshore operations due to weather. Task forces conducted maintenance and reviewed hazardous weather and operational plans during down time. Minimal VOO deployed today due to inclement weather. VOO training conducted in Panama City and Destin.

Offshore: Utilized weather delays for safety stand-down and replenishment of consumables.

Boom: Boom deployment, inspection and maintenance conducted throughout Escambia, Franklin, Gulf Bay and Walton Counties. Additional boom was installed in Bayou Chico. Deployed 12,400' hard boom in last 24 hrs.

County	Claims Paid	County	Claims Paid
Okaloosa	$4,580,097	Taylor	$83,933
Escambia	$4,347,370	Citrus	$71,072
Franklin	$3,580,329	Liberty	$59,470
Bay	$3,129,366	Hernando	$57,788
Santa Rosa	$2,313,914	Washington	$46,095
Wakulla	$816,168	Broward	$36,061
Gulf	$692,683	Manatee	$28,633
Walton	$675,465	Gadsden	$25,850
Orange	$237,110	Calhoun	$23,045
Pasco	$205,364	Jackson	$22,514

Duval	$195,930
Pinellas	$193,970
Collier	$139,713
Monroe	$122,153
Leon	$116,510
Hillsborough	$114,935

Dixie	$21,663
Brevard	$20,339
Alachua	$19,300
Holmes	$18,500
Other Counties	$294,679
Total Florida	**$22,375,703**

Claims

Filing Claims / Claims Offices – 34 Claims Offices are open across the Gulf Coast to provide locations where people can go to file or discuss claims. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965

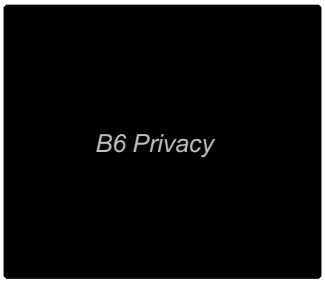
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	



Karen St John

BP America

Sr. Director, Regulatory Affairs


B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$2,662,579
LA	$73,789,059
MS	$14,661,610
AL	$27,904,790
FL	$22,375,703
GA	$670,023
Other	$1,905,414
Total	**$143,969,178**

Gulf of Mexico Incident Daily Dashboard

Period: 7/1/10 6AM – 7/2/10 6AM

Produced by BP's Washington , DC Office-
Sources: BP and National Incident Command

Highlights:

- **New Technical Update available at www.bp.com describes relief well progress**
- **Weather has limited surface response activities in the past three days, including burns, boom deployment and dispersant applications.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	284	**672,457**
Aerial & Vessel dispersants applied (gals)	17,852	**1,050,749**
Subsea dispersants applied (gals)	10,758	**600,971**
In-situ Burns	0	**275**
In-situ Burn (bbls burned)	0	**237,950**
LMRP CAP/Enterprise Oil Recovered (bbls)	16,198	**421,278**
LMRP CAP+Q4000 Gas flared (mmscf)	57.1	**1,243.7**
Q4000 Oil recovered (bbls)	8,236	**135,877**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	713	849	1,157	502	0	**3,331**
Barges	442	69	66	30	0	**607**
Other Vessels	1,477	379	464	262	24	**2,605**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**550**
Fixed Wing Aircraft	_	_	_	_	_	**37**
Helicopters	_	_	_	_	_	**78**
Total:	**2,632**	**1,296**	**1,687**	**794**	**24**	**7,208**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	1,704,968	395,050	578,000	401,900	**2,779,918**
Boom Staged	444,839	52,150	106,750	207,500	**811,239**
Ordered					**815,452**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	55	**2,781**
Personnel	_	**43,128**

Image not available for this document, ID: 0.7.19.2011.2

CLAIMS



www.bp.com

Total	$143,969,178

SURFACE / SUBSEA OPERATIONS

	672,457
	1,050,749
	600,971
	275
	237,950
	421,278
	1,243.7
	135,877

BOOM (feet)

	2,779,918
	811,239
	815,452

EQUIPMENT

					3,331
					607
					2,605
					550
					37
					78
2,632	1,296	1,687	794	24	7,208

MISCELLANEOUS

	2,781
	43,128

Received(Date): Sun, 04 Jul 2010 14:01:57 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Dispersant summary for Principals
To: Steve Murawski <Steve.Murawski@noaa.gov>,Robert Haddad <Robert.Haddad@noaa.gov>,Shelby Walker <Shelby.Walker@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>, Ed Levine <Ed.Levine@noaa.gov>,Doug Helton <Doug.Helton@noaa.gov>, Alan Mearns <Alan.Mearns@noaa.gov>,William Conner <William.Conner@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Beth Lumsden <Beth.Lumsden@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>
NOAA Input for Principals Meeting v_1.1doc-1.doc

To all:
Attached is the draft document for your review.
As explained earlier, we understand that some of you will not be able to provide input because of previous commitments today. However if you have time to review, please provide edits to Bill Conner tonight (we are shooting for 8pm). He will incorporate these comments into a draft product for leadership and final review tomorrow (will be sent out sometime early tomorrow morning), which will give us time to make any changes before Dr. Lubchenco's meeting on Tuesday/Wednesday. Remember, in your review that we are trying to provide a framework for the Principals to understand the dispersant decision-making process being careful in this document not to advocate "for or against" their use.
One area that did not get much attention in the draft was "other alternatives" that may have not be thought of. If anyone has thoughts we can incorporate those and add attachments if appropriate. Also in terms of knowledge gaps and future areas of study, we might also mention that while better studied we don't know all the ecological impacts of other technologies, so this adds additional challenges in weighing this alternative as part of the response.
Remember this is a work in progress and Thank you for doing this on the Holiday Weekend!
v/r
Dave

John Rapp,
Please send the following note to DWH leadership.
"The draft dispersant document is being circulated and reviewed by the broader team discussed on Friday. If anyone wants to see the working interim product today, please let me, Bill Conner or Dave Westerholm know and we can forward this initial draft. Otherwise Bill Conner will incorporate changes into this draft product and distribute for leadership tomorrow morning."

DRAFT 1.1

Information Synthesis:
Chemical Dispersants for Oil Spills

The purpose of this document is to provide a brief overview of information on oil dispersants in general, and within the context of the Deepwater Horizon BP oil spill.

Dispersant Chemistry

The components of dispersants are determined as part of the EPA regulatory process and are, therefore, well known. Attachment 1 lists the specific components of Corexit 9527 and Corexit 9500. Both of these have been used during the response to the Deepwater Horizon BP spill, with Corexit 9500 being used more frequently. Dispersants contain two types of ingredients: a surfactant and a solvent. Surfactants work like a household detergent to break down the oil into smaller droplets. The solvent carries the surfactant into the oil slick so that the surfactant can work effectively.

Although we know the components of all the dispersants that are listed on the EPA product schedule, the relative amounts of the ingredients are proprietary. We know of no published independent chemical analysis of Corexit 9500 or 9527 that would confirm the ingredients and screen for trace constituents that, if present, might be of concern.

We know of no detailed studies on the degradation rate of Corexit products, or their fate once released into the environment. However, based on the chemistry of the constituents, it is reasonable to expect these dispersants to either dissolve quickly into the water or break down rapidly. There are no known constituents that would biomagnify or move into the food chain. No evidence of the dispersant constituents propylene glycol (1,2-propanediol) and 2-butoxy ethanol, which make up about 30% of the dispersant mixture, have been found during analysis of water samples by NOAA.

Dispersant Effectiveness

Effectiveness means the percent of treated oil that is actually dispersed into the water. Dozens of laboratory and mesocosm effectiveness tests have been done on dispersant products, including many dozens using Corexit 9527 and 9500. For product comparison/selection, EPA has required vendors to conduct and report the ability of their product to disperse two kinds of crude oils: South Louisiana Crude and Prudhoe Bay crude. The required test is the swirling flask test with specific conditions of energy, temperature and other standards. The resulting product schedule list includes only those products that on average dispersed at least 50% of the treated crude oils (See Attachment 2).

These tests have shown that Corexit products can be effective at dispersing oil when applied under the proper conditions. There are three main factors that determine the effectiveness of dispersant application. First, the oil must be "dispersible," meaning that it must respond to the dispersant when it is applied. The oil cannot be too old, weathered, or water-laden. Second, there must be enough wave energy to allow the dispersant to work. Dispersants should not be applied during dead calm conditions. Finally, the dispersant must be accurately applied to the target oil, whether this is done by plane, ship, or sea bed injection.

The following observations indicate that dispersants applied during the Deepwater Horizon BP oil spill response have been effective at dispersing oil:

- Surface Application.
    - Visual observations note a change in surface oil after application of dispersants.
    - Fluorometry data collected after application of dispersants consistently show oil moving down into the water column.

- Seabed Injection.
    - Visible changes in the surface expression of the oil release are correlated with sea bed injection.
    - Increases in Volatile Organic Compound (VOC) levels at the surface with sea bed injection is interrupted (indicating that more oil is surfacing without dispersant use at the source)
    - Observations of smaller droplets in the source plume when dispersants are being applied at the source.

Further work is needed to optimize the ratio of dispersants applied at the source for this type of oil, to ensure that the appropriate amount of dispersant is used to achieve the desired effectiveness without using more dispersant than needed.

Toxicity of Dispersants and Dispersed Oil

Hundreds of short-term, long-term, and chronic toxicity tests have been done on dispersant products, including Corexit 8527 and 9500, and the toxicity tests recently published by EPA. The results, expressed as the concentration that causes mortality in 50% of the test organisms (LC50), generally have been in the range of 10 to over 100 parts per million (ppm). Attachment 3 provides a summary of toxicity findings for Corexit 9500 testing of crustaceans. According to EPA's standard scale for ranking the toxicity of chemicals, most dispersants, including the two Corexit products, are "slightly toxic."

Some tests are conducted on dispersants alone and some are conducted on dispersed oil. The table below illustrates two commonly held understandings about toxicity of Corexit products: 1) Crustacea (crabs, shrimp, and related species) are more sensitive than fish, and 2) Dispersed oil is more generally toxic than dispersant alone.

Table 1. Summary of Dispersant Toxicity Tests: 96-Hour exposure, 5% most sensitive species.

		LC 50 for 5% most sensitive species	
		Fish	Crustacea
Corexit 9500	Dispersant Only	15 ppm	0.8ppm
	Dispersed Oil	0.8ppm	0.6ppm
Corexit 9527	Dispersant Only	10ppm	1-5ppm
	Dispersed Oil	0.2ppm	1-2ppm

Although acute toxicity tests provide some useful insights and guidelines, these simple tests do not reveal all that has been learned about dispersant toxicity. Because dispersants cause the formation of small oil droplets, making the toxic oil components more available by increasing the surface area to volume ratio, it is thought that there is often a pulse of high toxicity shortly after dispersant application. Additional testing has been conducted, showing that the most sensitive species and life stages are affected at concentrations in the range of 1 to 10 ppm (parts per million) for 4-day exposures. Coral eggs and larvae are possibly the most sensitive forms with acute toxicities in the mid- to high- part per billion (ppb) range (reviewed in NRC 2005, Chapter 5). It is this kind of information which is important for conducting ecological risk assessments of monitored and modeled, real-world dispersant applications.

Effects of dispersants on marine wildlife including birds, mammals, reptiles and amphibians represent another category of toxicity concern. What little work has been done on these is reviewed in NRC (2005). The NRC in fact called for more research on this, but since that time, little work has been completed.

Finally, dispersants should be examined with respect to any implications for sea food quality. The Food and Drug Administration issued a memorandum on May 14 of this year evaluating Corexit from this perspective (see Attachment 4). FDA reviewed the literature and also assessed the potential for

dispersant toxicity based on the chemical makeup of the constituents. Based on these considerations, FDA concluded that "the available information indicates that dispersants have little or no effect on the bioaccumulation potential of oil contaminants, nor do they themselves accumulate in seafood."

Scale of Dispersant and Dispersed Oil Contamination Effects

Responders need to know the geographic scales of petroleum contamination and the extent to which concentrations of dispersants and dispersed oil are causing impacts to marine resources. Work has been conducted to model and map the sizes, shapes and fates of dispersed oil in surface water and deep water. The challenges in this work are immense because modeling assumptions have to be carefully verified and water sampling data documented and subjected to QA/QC screening.

Deep Water. Based on water sampling near the Deepwater Horizon well source in May and early June, and modeling in the same time period we believe that the area of the water mass containing dispersed oil was on the order of 3km wide x 12 to 20 km long, or 36 to 60 sq km. The layer was 100 to 200 meters thick and centered along a constant depth trailing to the southwest. Concentrations of oil appeared to be in the range of low ppm near the source to low ppb at the outer edge.

Except near the source, these concentrations of total oil, in the ppb range, are well below concentrations of acute toxicity to the most sensitive species, namely in the 0.1 to 1.0 ppm (100 to 1000 ppb range). Likewise, the concentrations of the dispersant would be 20 or more times lower, in the low ppb range, again, below toxicity thresholds.

Surface Water. On any day oil slicks and emulsions cover thousands of square kilometers of the offshore and near shore sea surface waters. Of this total area, only a small fraction can be treated with dispersants by air operations. But that fraction is important because it is fresh oil emanating from the source and the dispersant operations are mainly in that area 25 to 40 kilometers off shore over deep water (800 to 2000 m), where the thickest concentrations of oil occur.

Monitoring confirms that high concentrations of dispersed oil (in the 100's of ppm range) occur immediately under the treated slicks during the first minutes to hour after treatment. The monitoring data also show that these concentrations decline rapidly and with distance from the treated area to the extent that data show "below detection" in large areas of the approved dispersant application zone. Further, by analogy, concentrations of free dispersant would be 20 or more times lower, although we do not yet have data on their concentrations to confirm this. However, simple there dimensional trajectory modeling of treated slicks shows that dispersed oil concentrations should be in the low ppb range as the plumes expand over 1 to 3 days, and concentrations of dispersants in the low to sub-part per billion (part per trillion) range.

These concentrations would be expected to impact zooplankton and fish eggs and larvae entrained in the dispersed oil surface water plumes immediately below the treated swaths. However, as mixing and spreading proceeds (in three dimensions) away from the treated swaths, concentrations of dispersed oil the upper 1 to 10 meters meter of water decline to the extent that organisms entering these area would not be expected to experience toxic concentrations of either oil or free dispersant.

Regulatory Roles

Subpart J (40 CFR Part 300.910) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (see Attachment 4) specifies that Regional Response Teams (RRT) and Area Committees should, as appropriate include plans for the use of dispersants, as well as other response technologies. RRT 6 has developed the "FOSC Dispersant Pre-approval Guidelines" which includes a flowchart (Attachment 5) that describes the decision path the FOSC must follow for dispersant use, and establishes the circumstances under which dispersant use is pre-approved. One criterion for

dispersant use is that the chemical must be included on the NCP Product Schedule. The FOSC and EPA have developed additional directives for the Deepwater Horizon (MC252) incident that impact dispersant use (Attachment 6).

Biggest Potential for Regret

From the information summarized above, it should be clear that using dispersants to respond to an oil spill will have adverse environmental consequences. That is a given. But once oil is in the water, there are no perfect solutions. In combination with other tactics like skimming, booming, and burning, dispersants give us a chance to choose between negative effects caused by oil in the water column and negative effects to wildlife and shorelines caused by oil on the surface. In a workshop convened by NOAA and the University of New Hampshire Coastal Response Research Center, a group of 50 experts concluded that it would be beneficial to continue to consider dispersant use, both at the surface and through sea bed injection, as one of the tools available to the Deepwater Horizon FOSC. After two full days of deliberation, these experts could identify no overriding consideration that would suggest eliminating dispersant use from among the tactics that should be considered. The experts did, however, recognize the need for continued and adaptive monitoring programs, and also for an ongoing ecological risk assessment that would bring in new data and understandings as they are developed during this continuing response (full report available HERE).

Perhaps the biggest potential for regret lies in failing to continue to objectively consider all the response options available, including chemical dispersants

Priorities for Future Study

Much understanding has been accumulated about dispersants over the last 25 years. But there is more to be learned. Some of the most fruitful areas of investigation from the perspective of this response include:

- Identifying any contaminants or minor constituents in Corexit 9500 and 9527 that would carry special environmental or human health concerns.
- Optimizing dispersant application rates at the well head. Continuing to evaluate and improve monitoring of dispersant application – looking at effectiveness, effects, and concentrations in the water with and without chemical dispersants.
- Conducting an ongoing ecological risk assessment to continue to evaluate dispersant application pros and cons for the Deepwater Horizon.
- Evaluating dispersant effects for wildlife species, particularly in the Gulf of Mexico region.
- Finding and testing additional alternative technologies to consider in addition to chemical dispersants.

Attachment 1. Chemical Constituents of Corexit 9500 and 9527

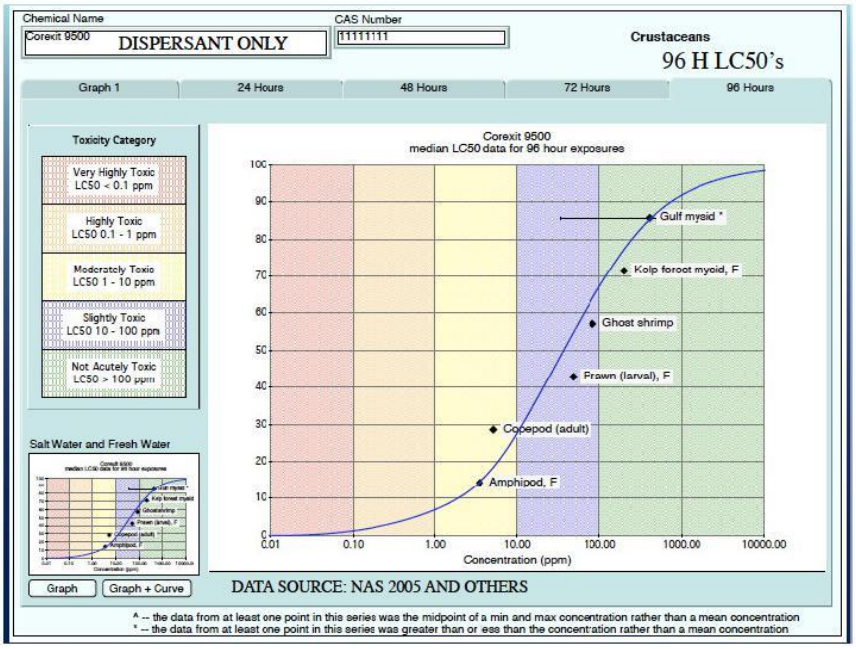
The components of COREXIT 9500 and 9527 are:	
CAS Registry Number	**Chemical Name**
57-55-6	1,2-Propanediol
111-76-2	Ethanol, 2-butoxy-*
577-11-7	Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)
1338-43-8	Sorbitan, mono-(9Z)-9-octadecenoate
9005-65-6	Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs.
9005-70-3	Sorbitan, tri-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs
29911-28-2	2-Propanol, 1-(2-butoxy-1-methylethoxy)-
64742-47-8	Distillates (petroleum), hydrotreated light
*Note: This chemical component (Ethanol, 2-butoxy-) is NOT included in the composition of Corexit 9500.	

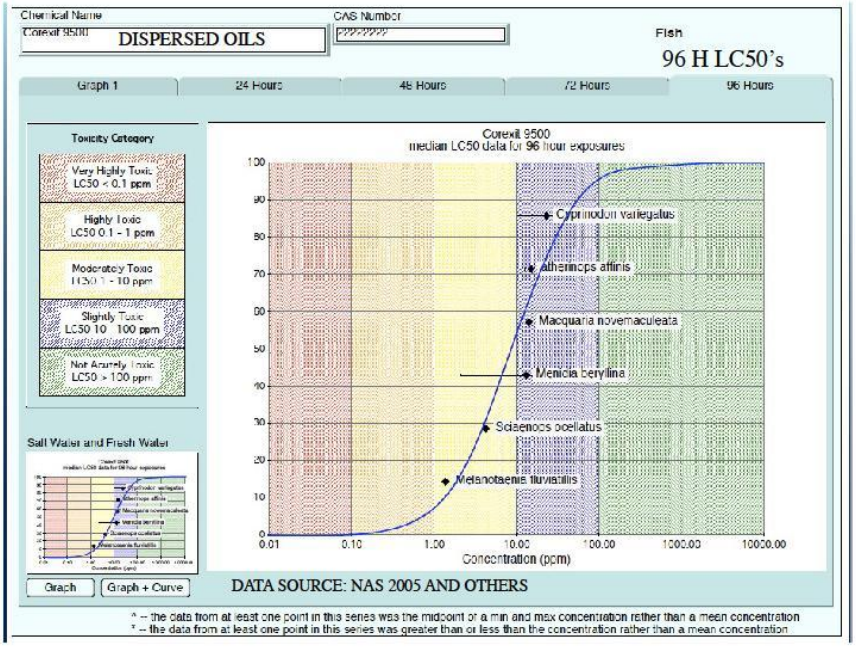
Attachment 2: EPA Dispersant Product Table – provides effectiveness and toxicity**.**

Product (1:10 Product-to-No. 2 Fuel Oil ratio)	Toxicity (LC50 values in ppm)		Effectiveness (%)		
	Menidia (96-hr)	Mysidopsis (48-hr)	Prudhoe Bay Crude Oil	South Louisiana Crude Oil	Average of Crude Oils
BIODISPERS	5.95	2.66	51.00	63.00	57.00
COREXIT® EC9500A	2.61	3.40	45.30	54.70	50.00
COREXIT® EC9527A	4.49	6.60	37.40	63.40	50.40
DISPERSIT SPC 1000™	7.90	8.20	40.00	100.00	73.00
FINASOL OSR 52	5.40	2.37	32.50	71.60	52.10
JD-109	3.84	3.51	26.00	91.00	58.50
JD-2000™	3.59	2.19	60.40	77.80	69.10
MARE CLEAN 200	42.00	9.84	63.97	84.14	74.06
NEOS AB3000	57.00	25.00	19.70	89.80	54.80
NOKOMIS 3-AA	7.03	5.56	63.20	65.70	64.50
NOKOMIS 3-F4	100	58.40	62.20	64.90	63.55
SAF-RON GOLD	9.25	3.04	84.80	53.80	69.30
SEA BRAT #4	23.00	18.00	53.55	60.65	57.10
SEACARE ECOSPERSE 52 (see FINASOL® OSR 52)	5.40	2.37	32.50	71.60	52.10
SEACARE E.P.A. (see DISPERSIT SPC 1000™)	7.90	8.20	40.00	100.00	73.00
SF-GOLD DISPERSANT (see SAF-RON GOLD)	9.25	3.04	84.80	53.80	69.30
ZI-400	8.35	1.77	50.10	89.80	69.90
ZI-400 OIL SPILL DISPERSANT (see ZI-400)	8.35	1.77	50.10	89.80	69.90

Attachment 3.

Summary of 96-hour toxicity testing results as lethal concentration for 50% of test organisms, for a variety of crustaceans for Corexit 9500. The top figure shows dispersant only, the bottom figure shows dispersed oil. Note that dispersed oil causes more toxicity at lower concentrations than dispersant alone.





Attachment 4. FDA Memo

Attachment 5.

TITLE 40 - CHAPTER I - ENVIRONMENTAL PROTECTION AGENCY
SUBCHAPTER J - SUPERFUND, EMERGENCY PLANNING, AND COMMUNITY RIGHT - TO - KNOW PROGRAMS
PART 300.910 - NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN -USE OF DISPERSANTS AND OTHER CHEMICALS

300.910 - Authorization of use. (a) RRTs and Area Committees shall address, as part of their planning activities, the desirability of using appropriate dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents listed on the NCP Product Schedule, and the desirability of using appropriate burning agents. RCPs and ACPs shall, as appropriate, include applicable preauthorization plans and address the specific contexts in which such products should and should not be used. In meeting the provisions of this paragraph, preauthorization plans may address factors such as the potential sources and types of oil that might be spilled, the existence and location of environmentally sensitive resources that might be impacted by spilled oil, available product and storage locations, available equipment and adequately trained operators, and the available means to monitor product application and effectiveness. The RRT representatives from EPA and the states with jurisdiction over the waters of the area to which a preauthorization plan applies and the DOC and DOI natural resource trustees shall review and either approve, disapprove, or approve with modification the preauthorization plans developed by Area Committees, as appropriate. Approved preauthorization plans shall be included in the appropriate RCPs and ACPs. If the RRT representatives from EPA and the states with jurisdiction over the waters of the area to which a preauthorization plan applies and the DOC and DOI natural resource trustees approve in advance the use of certain products under specified circumstances as described in the preauthorization plan, the OSC may authorize the use of the products without obtaining the specific concurrences described in paragraphs (b) and (c) of this section.

(b) For spill situations that are not addressed by the preauthorization plans developed pursuant to paragraph (a) of this section, the OSC, with the concurrence of the EPA representative to the RRT and, as appropriate, the concurrence of the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, and in consultation with the DOC and DOI natural resource trustees, when practicable, may authorize the use of dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents on the oil discharge, provided that the products are listed on the NCP Product Schedule.

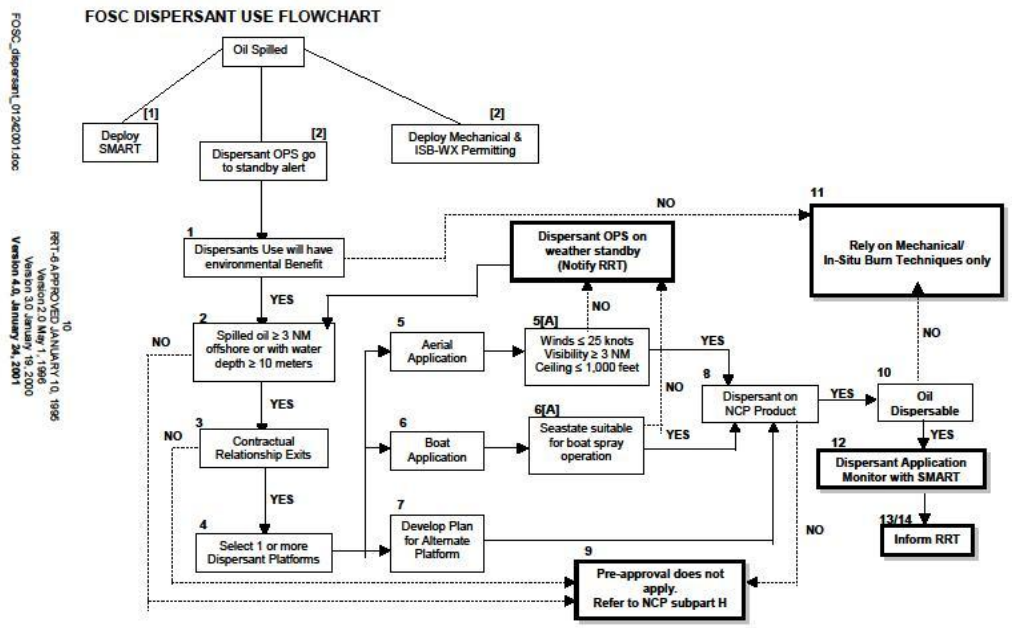
(c) The OSC, with the concurrence of the EPA representative to the RRT and, as appropriate, the concurrence of the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, and in consultation with the DOC and DOI natural resource trustees, when practicable, may authorize the use of burning agents on a case-by-case basis.

(d) The OSC may authorize the use of any dispersant, surface washing agent, surface collecting agent, other chemical agent, burning agent, bioremediation agent, or miscellaneous oil spill control agent, including products not listed on the NCP Product Schedule, without obtaining the concurrence of the EPA representative to the RRT and, as appropriate, the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, when, in the judgment of the OSC, the use of the product is necessary to prevent or substantially reduce a hazard to human life. Whenever the OSC authorizes the use of a product pursuant to this paragraph, the OSC is to inform the EPA RRT representative and, as appropriate, the RRT representatives from the affected states and, when practicable, the DOC/DOI natural resources trustees of the use of a product, including products not on the Schedule, as soon as possible. Once the threat to human life has subsided, the continued use of a product shall be in accordance with paragraphs (a), (b), and (c) of this section.

(e) Sinking agents shall not be authorized for application to oil discharges.

(f) When developing preauthorization plans, RRTs may require the performance of supplementary toxicity and effectiveness testing of products, in addition to the test methods specified in 300.915 and described in Appendix C to part 300, due to existing site-specific or area-specific concerns.

Attachment 5. RRT 6 Decision Process Flowchart for Dispersant Use



Attachment 6.

Place holder for Deepwater Directives.

Chemical Name

Corexit 9500 DISPERSANT ONLY

CAS Number

11111111

Crustaceans

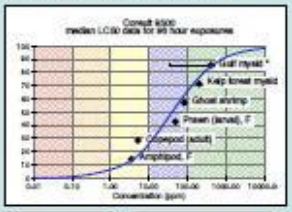
96 H LC50's

Graph 1 | 24 Hours | 48 Hours | 72 Hours | 96 Hours

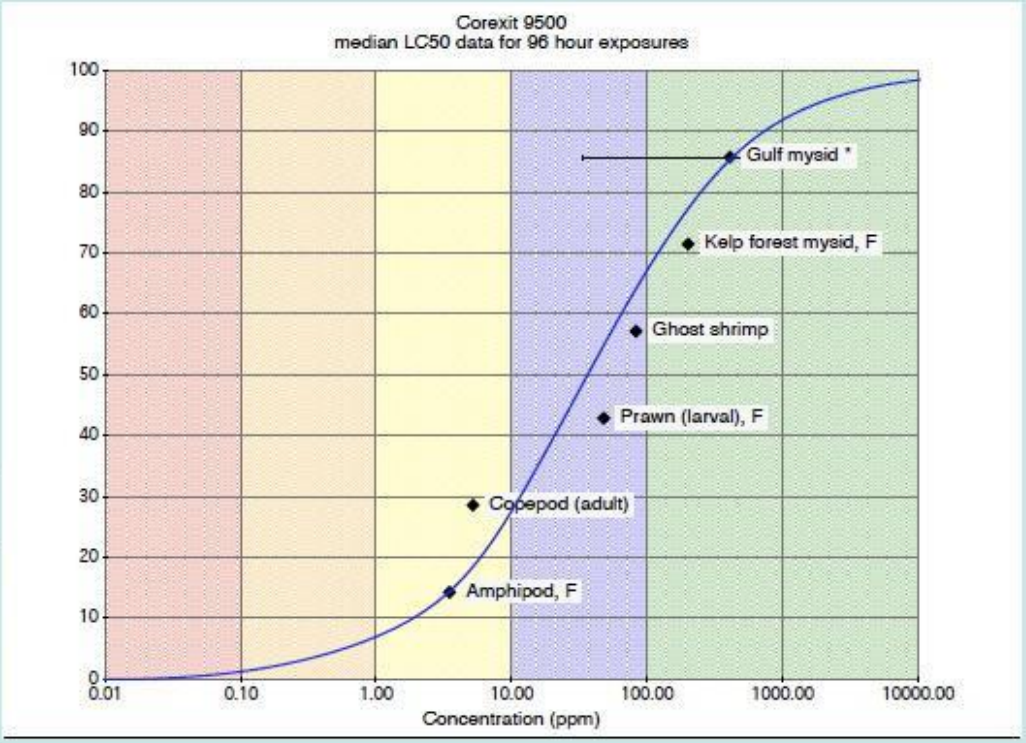
Toxicity Category

- Very Highly Toxic LC50 < 0.1 ppm
- Highly Toxic LC50 0.1 - 1 ppm
- Moderately Toxic LC50 1 - 10 ppm
- Slightly Toxic LC50 10 - 100 ppm
- Not Acutely Toxic LC50 > 100 ppm

Salt Water and Fresh Water



Graph | Graph + Curve



DATA SOURCE: NAS 2005 AND OTHERS

^ -- the data from at least one point in this series was the midpoint of a min and max concentration rather than a mean concentration

* -- the data from at least one point in this series was greater than or less than the concentration rather than a mean concentration

Chemical Name

Corexit 9500 DISPERSED OILS

CAS Number

22222222

Fish

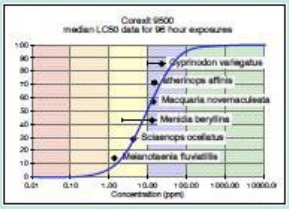
96 H LC50's

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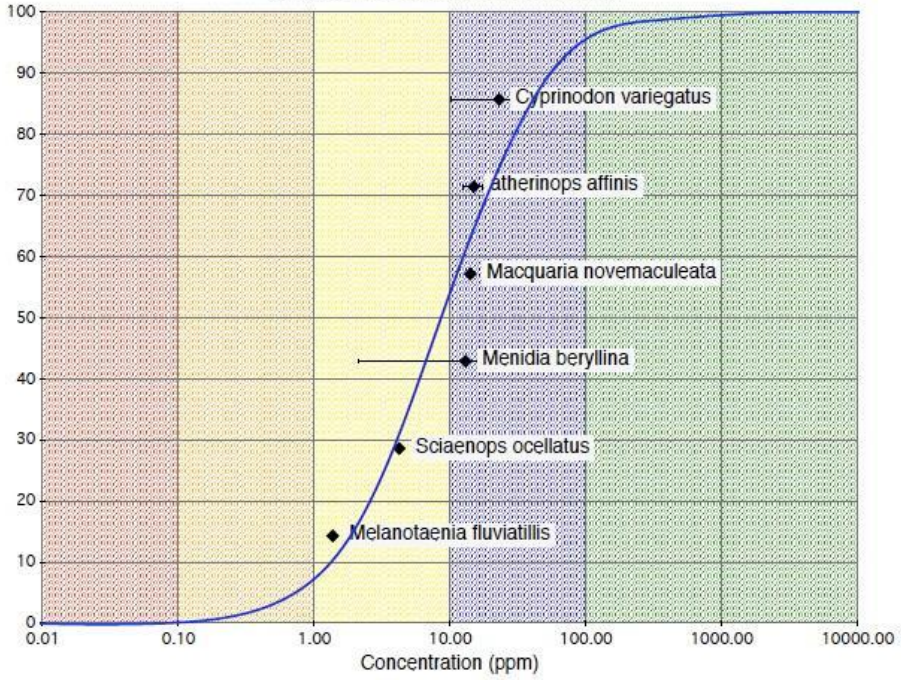
Toxicity Category

- Very Highly Toxic LC50 < 0.1 ppm
- Highly Toxic LC50 0.1 - 1 ppm
- Moderately Toxic LC50 1 - 10 ppm
- Slightly Toxic LC50 10 - 100 ppm
- Not Acutely Toxic LC50 > 100 ppm

Salt Water and Fresh Water



Graph | Graph + Curve

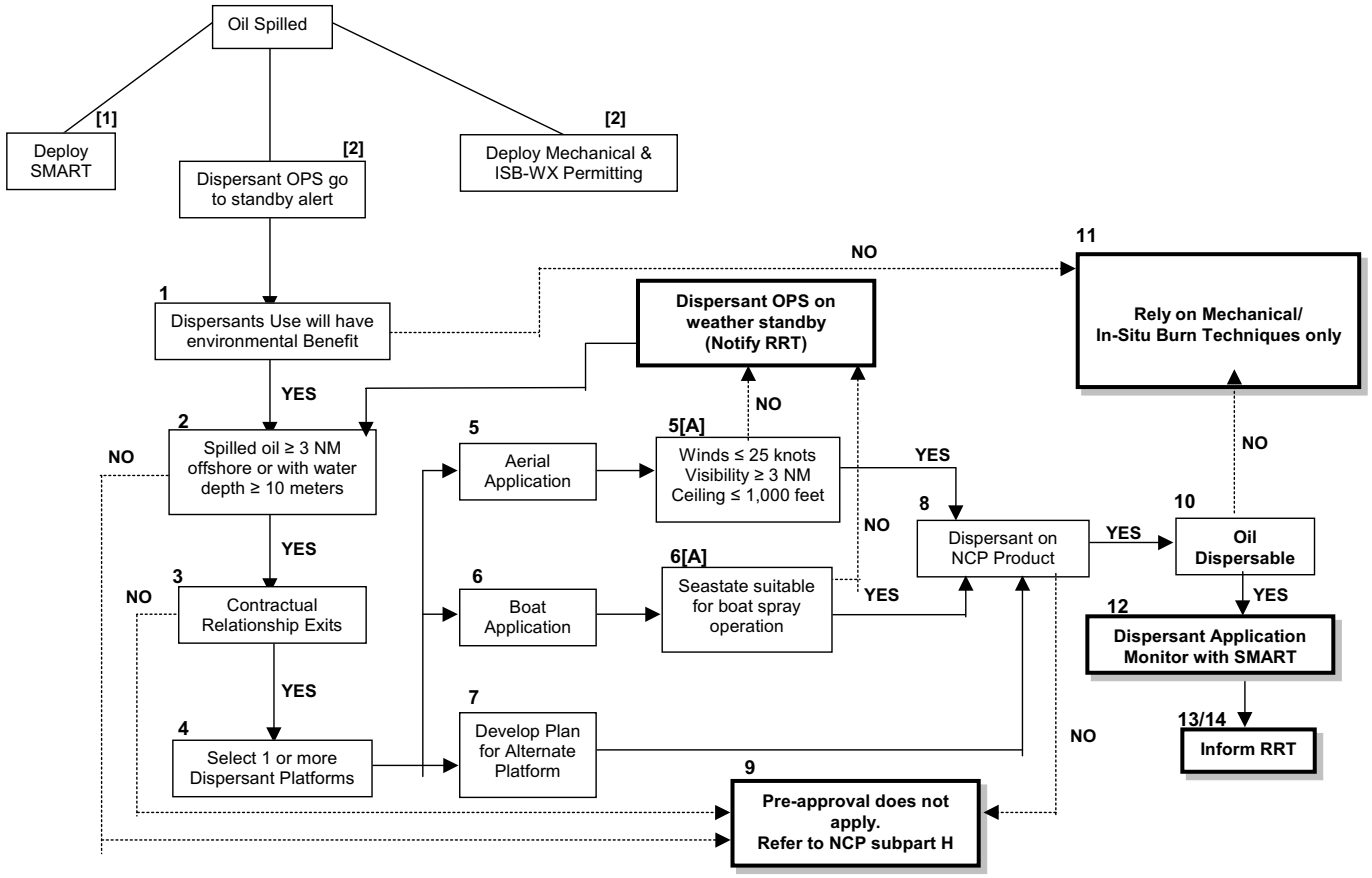


DATA SOURCE: NAS 2005 AND OTHERS

^ -- the data from at least one point in this series was the midpoint of a min and max concentration rather than a mean concentration

* -- the data from at least one point in this series was greater than or less than the concentration rather than a mean concentration

FOSC DISPERSANT USE FLOWCHART



Document ID: 0.7.19.1810.1.3

Received(Date): Mon, 05 Jul 2010 20:15:35 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: [Fwd: DWH Data Cheat Sheet]
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: "icc.omao" <ICC.OMAO@noaa.gov>
cheat_sheet_070510.docx
Shelby_Walker.vcf

Hi Jen et al,
In response to Amrit's request, I went ahead and filled in some information on the Brooks McCall and Weatherbird (pretty much pulled straight from the press release) and added what I know about the current vessel deployments (would recommend that OMAO confirm-I've copied them here).
I didn't see any traffic on this and didn't want to duplicate efforts, but I'm happy to help put together any of the other data as needed.
Thanks,
Shelby

-------- Original Message --------

Subject:DWH Data Cheat Sheet
Date: Mon, 05 Jul 2010 19:10:19 -0400
From: Amrit Mehra <Amrit.Mehra@noaa.gov>
To:_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin Kenney <Justin.kenney@noaa.gov>
CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns <Arron.Layns@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>

Dear DWH Staff and Justin,

In preparation for Dr. Lubchenco's interview with Andrea Mitchell tomorrow in Aspen, she would like to have a one-page cheat sheet put together with key data. **Can someone begin pulling the following info together from the various sources out there?** Some of the data can be found in the latest NIC briefing update attached here.

Ideally, we'd like something tonight but otherwise, by the update call tomorrow morning.

- Fishery closures

o Latest % of GOM closed

o Max/min % (since the first closure)

- Total # of SCAT teams: initially + currently
- Flow rate: timeline for different estimates + estimates themselves
- Wildlife figures
  - Turtles: total dead, total found alive & number (Xn) above normal/average
  - Birds: total dead, total found alive & number (Xn) above normal/average
  - Marine mammals: total dead, total found alive & number (Xn) above normal/average
- Latest total # of barrels & gallons spilled
  - Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
  - Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth
- NOAA personnel
  - Total # regularly in Gulf states (by State)
  - Total # on travel orders in Gulf states (by State)
- Date of seafood protocols announcement: Tuesday, June 29
- Amount of boom deployed
- Amount of oil recovered (progression)
  - Initially (date?)
  - After 1 month
  - After 2 months
  - Latest figure
- Amount of aerial and subsea dispersant deployed (progression)
  - Initially (date?)
  - After 1 month
  - After 2 months
  - Latest figure
- Results of Brooks McCall data
- Results of Weatherbird

- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what they are doing
- Probability of oil hitting more shoreline (long-term projections)
- Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)
- Other factoids

o % of U.S. wetlands in LA (40%?)

o % of fisheries dependent on Gulf marshes/habitats (70-80%?)

o Value of Gulf of Mexico commercial and recreational fisheries

Please let me know who can start compiling this data and send to me. Format and length of document not as important as getting all the data.

Thanks!

Amrit

--
Amrit Mehra
Special Assistant to the Administrator
National Oceanic and Atmospheric Administration
Direct: B6 Privacy | B7(c) B6 Privacy

Fishery closures

- Latest % of GOM closed
- Max/min % (since the first closure)

· Total # of SCAT teams: initially + currently

· Flow rate: timeline for different estimates + estimates themselves

· Wildlife figures

- Turtles: total dead, total found alive & number (Xn) above normal/average
- Birds: total dead, total found alive & number (Xn) above normal/average
- Marine mammals: total dead, total found alive & number (Xn) above normal/average

· Latest total # of barrels & gallons spilled

- Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
- Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth

· NOAA personnel

- Total # regularly in Gulf states (by State)
- Total # on travel orders in Gulf states (by State)

· Date of seafood protocols announcement: Tuesday, June 29

· Amount of boom deployed

· Amount of oil recovered (progression)

- Initially (date?)
- After 1 month
- After 2 months
- Latest figure

· Amount of aerial and subsea dispersant deployed (progression)

- Initially (date?)

- After 1 month
- After 2 months
- Latest figure

- Results of Brooks McCall data
  - Confirms the existence of a previously discovered cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead.
  - TPH concentrations at these depths are in concentrations of about 1-2 ppm. Between that depth and the surface mix layer, which is defined as 450 feet below the surface, concentrations fell to levels that were not readily discernable from background levels.
  - Cloud is most concentrated near the source of the leak and decreases with distance from the wellhead.
  - Beyond six miles from the wellhead, TPH concentrations drop to ND levels.
  - DO levels remained above immediate levels of concern
- Results of Weatherbird
  - Hydrocarbons (HCs) found in surface samples taken at the Slick 1 source, 40 nautical miles northeast from the well head, were consistent with the BP oil spill source;
  - HCs found in samples from Station 07—45* nautical miles northeast from the well head—at the surface, at 50 meters and at 400 meters are petroleum-derived but in concentrations too low to confirm the source;
  - HCs found in samples taken from Station 01, 142 nautical miles southeast of the well head, at 100 meters and 300 meters were not consistent with the BP oil spill source.
- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what they are doing
  - R/V Nancy Foster-Loop Current cruise; underway
  - R/V Delaware II-pelagic fish long-line survey; underway
  - R/V Oregon II-shrimp and groundfish survey; underway
  - R/V Gordon Gunter-marine mammal survey; underway
  - R/V Pisces-alongside Pascagoula (next scheduled cruise is reef fish survey)
  - R/V Thomas Jefferson-alongside Key West (next cruise is non-DWH hydrographic survey)
  -

· Probability of oil hitting more shoreline (long-term projections)

· Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)

· Other factoids

  - % of U.S. wetlands in LA (40%?)
  - % of fisheries dependent on Gulf marshes/habitats (70-80%?)
  - Value of Gulf of Mexico commercial and recreational fisheries

Shelby Walker, PhD

Strategic Planning Team Lead

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Formatted Name
Shelby Walker, PhD

Name

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Middle:	
Prefix:	
Suffix:	

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Strategic Planning Team Lead

Telephone Number (Work)
301-734-1049

Telephone Number (Cell)
301-938-7328

Version
2.1

Received(Date): Mon, 05 Jul 2010 22:52:56 -0400
From: John Rapp <John.Rapp@noaa.gov>
Subject: Fwd: [Fwd: DWH Data Cheat Sheet]
To: Amrit Mehra <Amrit.Mehra@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
gulffisheriesbrief.docx
cheat_sheet_070510.docx
Closures by date.docx
Attachment

Amrit,

Everything you requested, except for the number of personnel deployed, is in the attached. We'll work on getting that to you, but figured
there's still time tonight for Dr. Lubchenco to review.
John

Begin forwarded message:

> From: John Rapp <John.Rapp@noaa.gov>
> Date: July 5, 2010 10:19:35 PM EDT
> To: Joe Inslee <Joe.Inslee@noaa.gov>
> Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
> Subject: Re: [Fwd: DWH Data Cheat Sheet]
>

> I've added to Joe's information which was seemingly added to
> Shelby's (cheat_sheet_070510.docx). I've also attached some
> background information should Dr. Lubchenco need more material.
>
> Who's sending this forward?
>
> John
>
> Joe Inslee wrote:
>> Hi all,
>>
>> First - I meant to say July 5th as the current date in my last email
>>
>> Attached is a draft that has some more response information filled >> out. The highlighted (yellow) areas are questions that are pretty
>> well filled out.
>>
>> - Joe
>>
>> Joe Inslee wrote:
>>> Evening,
>>> The spill occurred the night of April 20th. I am working on adding >>> a bit of the response data to what Shelby sent around. I will send >>> around what I have shortly. My thoughts are
>>> 1 month - May 21
>>> 2 month - June 21
>>> current -June 5'th
>>>
>>> Thoughts?
>>>
>>> -Joe
>>>

>>>
>>> Guy Noll wrote:
>>>> Thanks for kicking off, Shelby,
>>>> Shall we first agree that the "initial" is 30 April, the "one
>>>> month" date is 31 May, the "two month" date is 30 June, and the
>>>> "final" or "current" is 05 July, or do we need to stay within the >>>> 30 day of spill start for a
month? If we have agreed upon
>>>> periods, the data will likely match up better/be easier to speak >>>> to.
>>>> Guy
>>>>
>>>> On Mon, 05 Jul 2010 20:15:35 -0400, Shelby Walker <Shelby.Walker@noaa.gov
>>>> > wrote:
>>>>
>>>> Hi Jen et al,
>>>> In response to Amrit's request, I went ahead and filled in some
>>>> information on the Brooks McCall and Weatherbird (pretty much
>>>> pulled straight from the press release) and added what I know
>>>> about the current vessel deployments (would recommend that OMAO
>>>> confirm-I've copied them here).
>>>> I didn't see any traffic on this and didn't want to duplicate
>>>> efforts, but I'm happy to help put together any of the other
>>>> data
>>>> as needed.
>>>> Thanks,
>>>> Shelby
>>>>
>>>> -------- Original Message --------
>>>> Subject: DWH Data Cheat Sheet
>>>> Date: Mon, 05 Jul 2010 19:10:19 -0400
>>>> From: Amrit Mehra <Amrit.Mehra@noaa.gov>
>>>> To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,
>>>> Justin
>>>> Kenney <Justin.kenney@noaa.gov>
>>>> CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher
>>>> Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns
>>>> <Arron.Layns@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov
>>>> >
>>>>
>>>>
>>>>
>>>> Dear DWH Staff and Justin,
>>>>
>>>> In preparation for Dr. Lubchenco's interview with Andre
>>>> a Mitchell
>>>> tomorrow in Aspen, she would like to have a one-page cheat sheet
>>>> put together with key data. *Can someone begin pulling the
>>>> following info together from the various sources out there?* >>>> Some
>>>> of the data can be found in the latest NIC briefing update
>>>> attached here.
>>>>
>>>> Ideally, we'd like something tonight but otherwise, by
>>>> the update
>>>> call tomorrow morning.
>>>> · Fishery closures
>>>>
>>>> o Latest % of GOM closed
>>>>
>>>> o Max/min % (since the first closure)

>>>>
>>>> · Total # of SCAT teams: initially + currently
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>>>> · Flow rate: timeline for different estimates + es >>>> timates
>>>> themselves
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>>>> · Wildlife figures
>>>>
>>>> o Turtles: total dead, total found alive & number (Xn) above
>>>> normal/average
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>>>> o Birds: total dead, total found alive & number (Xn) above
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>>>> o Marine mammals: total dead, total found alive & number
>>>> (Xn)
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>>>> · Latest total # of barrels & gallons spilled
>>>>
>>>> o Total amount (barrels/gallons) oil spilled in Exxon-
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>>>> o Total amount (barrels/gallons) oil spilled in Ixtoc +
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>>>>
>>>> · NOAA personnel
>>>>
>>>> o Total # regularly in Gulf states (by State)
>>>>
>>>> o Total # on travel orders in Gulf states (by State)
>>>>
>>>> · Date of seafood protocols announcement: Tuesday, >>>> June 29
>>>>
>>>> · Amount of boom deployed
>>>>
>>>> · Amount of oil recovered (progression)
>>>>
>>>> o Initially (date?)
>>>>
>>>> o After 1 month
>>>>
>>>> o After 2 months
>>>>
>>>> o Latest figure
>>>>
>>>> · Amount of aerial and subsea dispersant deployed
>>>> (progression)
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>>>>
>>>> · Results of Brooks McCall data
>>>>
>>>> · Results of Weatherbird
>>>>
>>>> · Very short descriptions (few words) on which NOAA
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>>>> · Probability of oil hitting more shoreline (long-term
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>>>> · Hurricane forecasts and related factoids (3-7
>>>> hurricanes? 14 tropical storms?)
>>>>
>>>> · Other factoids
>>>>
>>>> o % of U.S. wetlands in LA (40%?)
>>>>
>>>> o % of fisheries dependent on Gulf marshes/habitats (70-80%?)
>>>>
>>>> o Value of Gulf of Mexico commercial and recreational
>>>> fisheries
>>>>
>>>> Please let me know who can start compiling this data and
>>>> send to
>>>> me. Format and length of document not as important as getting >>>> all
>>>> the data.
>>>>
>>>> Thanks!
>>>>
>>>> Amrit
>>>>
>>>> -- Amrit Mehra
>>>> Special Assistant to the Administrator
>>>> National Oceanic and Atmospheric Administration
>>>> Direct: B6 Privacy | Mobile: B6 Privacy
>>>>
>>>>
>>>>
>>>> --
>>>>
>>>> Captain Guy Noll, NOAA Corps NOAA Office of Marine & Aviation
>>>> Operations
>>>>
>>>> US Department of Commerce
>>>>
>>>
>>
>
>
>
>

Amrit,

Everything you requested, except for the number of personnel deployed, is in the attached. We'll work on getting that to you, but figured there's still time tonight for Dr. Lubchenco to review.

John

Begin forwarded message:

> **From:** John Rapp <John.Rapp@noaa.gov>
> **Date:** July 5, 2010 10:19:35 PM EDT
> **To:** Joe Inslee <Joe.Inslee@noaa.gov>
> **Cc:** _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
> **Subject: Re: [Fwd: DWH Data Cheat Sheet]**
>
> I've added to Joe's information which was seemingly added to Shelby's (cheat_sheet_070510.docx). I've also attached some background information should Dr. Lubchenco need more material.
>
> Who's sending this forward?
>
> John
>
> Joe Inslee wrote:
>
> > Hi all,
> >
> > First - I meant to say July 5th as the current date in my last email
> >
> > Attached is a draft that has some more response information filled out. The highlighted (yellow) areas are questions that are pretty well filled out.
> >
> > - Joe
> >
> > Joe Inslee wrote:
> >
> > > Evening,
> > >
> > > The spill occurred the night of April 20th. I am working on adding a bit of the response data to what Shelby sent around. I will send around what I have shortly. My thoughts are

1 month - May 21

2 month - June 21

current -June 5'th

Thoughts?

-Joe

Guy Noll wrote:

> Thanks for kicking off, Shelby,
>
> Shall we first agree that the "initial" is 30 April, the "one month" date is 31 May, the "two month" date is 30 June, and the "final" or "current" is 05 July, or do we need to stay within the 30 day of spill start for a month? If we have agreed upon periods, the data will likely match up better/be easier to speak to.
>
> Guy
>
> On Mon, 05 Jul 2010 20:15:35 -0400, Shelby Walker <Shelby.Walker@noaa.gov> wrote:
>
> > Hi Jen et al,
> >
> > In response to Amrit's request, I went ahead and filled in some
> >
> > information on the Brooks McCall and Weatherbird (pretty much
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> > about the current vessel

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confirm-I've copied them here).

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efforts, but I'm happy to help put together any of the other data

as needed.

Thanks,

Shelby

-------- Original Message --------

Subject: DWH Data Cheat Sheet

Date: Mon, 05 Jul 2010 19:10:19 -0400

From: Amrit Mehra <Amrit.Mehra@noaa.gov>

To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin

Kenney <Justin.kenney@noaa.gov>

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Dear DWH Staff and Justin,

In preparation for Dr. Lubchenco's interview with Andrea Mitchell tomorrow in Aspen, she would like to have a one-page cheat sheet put together with key data. *Can someone begin pulling the following info together from the various sources out there?* Some of the data can be found in the latest NIC briefing update attached here.

Ideally, we'd like something tonight but otherwise, by the update call tomorrow morning.

- Fishery closures
  - Latest % of GOM closed
  - Max/min % (since the first closure)
- Total # of SCAT teams: initially + currently
- Flow rate: timeline for different estimates + estimates themselves
- Wildlife figures

Document ID: 0.7.19.1692

o Turtles: total dead, total found alive & number (Xn) above

normal/average

o Birds: total dead, total found alive & number (Xn) above

normal/average

o Marine mammals: total dead, total found alive & number (Xn)

above normal/average

· Latest total # of barrels & gallons spilled

o Total amount (barrels/gallons) oil spilled in Exxon-Valdez +

length of time oil was spilling

o Total amount (barrels/gallons) oil spilled in Ixtoc + length

of time oil was spilling + depth

· NOAA personnel

o Total # regularly in Gulf states (by State)

o Total # on travel orders in Gulf states (by State)

· Date of seafood protocols announcement: Tuesday, June 29

- Amount of boom deployed

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  - After 2 months
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- Amount of aerial and subsea dispersant deployed (progression)
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- Results of Brooks McCall data

- Results of Weatherbird

- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what

they are doing

· Probability of oil hitting more shoreline (long-term projections)

· Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)

· Other factoids

o % of U.S. wetlands in LA (40%?)

o % of fisheries dependent on Gulf marshes/habitats (70-80%?)

o Value of Gulf of Mexico commercial and recreational fisheries

Please let me know who can start compiling this data and send to me. Format and length of document not as important as getting all the data.

Thanks!

Amrit

-- Amrit Mehra

Document ID: 0.7.19.1692

Special Assistant to the
Administrator

National Oceanic and Atmospheric
Administration

Direct: B6 Privacy | Mobile:
B6 Privacy

--

Captain Guy Noll, NOAA Corps
NOAA Office of Marine & Aviation
Operations

US Department of Commerce

Deepwater Horizon MC252: Fishery Info
June 27, 2010

General Overview

- Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.
    - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
    - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)

- Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).

- State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

Key Species / Seasonality

- Shrimp: Shrimp landings were the largest in the nation in 2008, representing 73% of the national total (LA, $130.6 million; TX, $157.2 million; AL, $38.4 million; W. FL, $23.3 million; MS, $17.1 million). Major species include white shrimp, pink shrimp and brown shrimp. Shrimp fisheries generally occur year-round; peaking in the summer, except for waters off Texas, which are closed May 15 until (usually) July 15. The principal shrimp fishery operates west of the Mississippi River.

- Oysters: The Gulf region also leads the nation in oyster production, producing about 67% of the national total in 2008 (LA, $38.8 million; TX, $8.83 million; MS, $6.87 million; W. FL, $5.47 million; AL, $243,414). There are substantial oyster reefs in LA, MS, and AL waters. Oyster fisheries generally occur year-round. Oysters are harvested from relatively shallow water through a combination of naturally occurring oysters and oysters cultivated by individual leaseholders on oyster "grounds" managed by individual entities.

- Crabs: Blue crabs are the most economically valuable crab species in the region. LA fishermen are responsible for about 26% of blue crab landings nationwide. Total landings were valued at $39.6 million in 2008 (LA, $32 million; W. FL, $3.3 million; TX, $2.3 million; AL, $1.5 million; MS, $447,000). Peak harvesting season is April-May. Blue crabs are harvested also from relatively shallow water, and are particularly found inshore in back bays and tidal tributaries.

Document ID: 0.7.19.1692.1

Deepwater Horizon MC252: Fishery Info
June 27, 2010

- Finfish: The Gulf of Mexico also supports valuable finfish fisheries, which target menhaden, reef fish, coastal migratory pelagic (open ocean fish), and highly migratory species.

    - Commercial menhaden fisheries operate in the north-central Gulf primarily during the summer and fall, and earned $64.4 million in revenue in 2008 (LA, $45.8 million; MS, $18.5 million). Menhaden are relatively low value fish caught in large volumes to be processed for fish oil and fish meal.
    - Commercial reef fish fisheries (snappers, groupers, amberjack, and triggerfish) operate throughout the Gulf primarily during spring through fall, and earned over $37.5 million in revenue in 2008 (W. FL, $28.4 million; TX, $4.9 million; LA, $3.5 million; AL, $750,000; MS, confidential). The nearshore and offshore waters of the north-central, northwestern and western Gulf of Mexico are areas of high red snapper abundance; the majority of the recreational red snapper fishery is conducted in the north-central Gulf of Mexico. The northeastern and eastern Gulf of Mexico are areas of high grouper abundance, both shallow water grouper on the continental shelf and deep water grouper along the outer shelf edge; the western Gulf of Mexico contains large numbers of deep water grouper in deep shelf edge reefs.
    - Coastal migratory pelagic fisheries (king mackerel, cobia, dolphin fish) generally operate in inshore and nearshore waters throughout the Gulf of Mexico year-round, although king mackerel is subject to seasonal-area quotas. The prime recreational season is spring through fall. Commercial fisheries earned $5.0 million in revenue in 2008 (W. FL, $2.9 million; LA, $1.4 million; AL, $703,000; MS and TX, confidential)
    - Several species of tuna and billfish occur throughout the Gulf of Mexico and fisheries for these species occur year-round. A primary fishery for yellowfin tuna occurs in the northern Gulf of Mexico and this fishery is most active spring through fall. Commercial fisheries earned $7.6 million in revenue in 2008 (LA, $5.3 million; W. FL, $2.2 million; other states minor)

Federal Closure Background/Reopening Protocol

- The fishery closure is the initial primary tool to ensure that fish affected by oil do not reach markets, thus protecting public confidence in product harvested from unaffected areas of the Gulf region. The closure area is complemented by seafood testing from around the closure area and ultimately in the marketplace.

- The closure approach has generally been supported by industry leaders as an important component of the effort to ensure public confidence. However, in certain lightly affected parts of the closure area to the west of the Mississippi delta and on the far southeastern boundary off W. Florida, some local fishermen are anxious for reopening.

- On May 2, 2010, NOAA Fisheries Service closed 6,817 square miles (3%) of Gulf of Mexico federal waters to fishing activity as a precautionary measure to ensure public safety and assure consumer confidence of Gulf of Mexico seafood in response to the Deepwater Horizon MC252 incident. Since then, we have adjusted the closed area boundaries 18 times. As of June 27, 2010, the current closed area boundaries cover about 78,597 square miles (33% of federal waters in the Gulf of Mexico) between western Terrebonne, LA, and Panama City, FL (map attached).

Document ID: 0.7.19.1692.1

Deepwater Horizon MC252: Fishery Info
June 27, 2010

- Waters are closed to harvesting when oil is present, has been present, or is projected to be present in the area in the near term (within a 72-hour time frame), based on the assumption that finfish, shrimp, and other shellfish species in the affected area could ingest the oil or otherwise be contaminated or adulterated by the oil. The U.S. Food and Drug Administration regulates the presence of oil contamination as an "adulterant" (an unwanted chemical substance) in seafood. Seafood that is adulterated may not be sold.

- Commercial and recreational fishing is prohibited within the closed area (transit and possession is allowed). NOAA Fisheries Service considered authorizing catch-and-release fishing within the closed area, but determined we need to better understand the potential risks of the spill and response activities, as well as law enforcement issues, before determining whether such action is appropriate.

- Each day, NOAA Fisheries Service reviews data provided by NOAA's Office of Response and Restoration on the present location and projected path of the oil and adjusts the closed area boundaries as needed. Updated information on the closed area boundary is communicated to the public at about 12 p.m. Eastern Time each day via fishery bulletins, the Southeast Regional Office website and Twitter and text alerts. Any changes to the closed area boundary take effect at 6 p.m. Eastern Time that same day to provide fishermen adequate time to respond to the notification and plan the next day's activities. The coordinates of the closed area are broadcast on NOAA Weather Radio and recorded at 1-800-627-NOAA (1-800-627-6622).

- NOAA Fisheries Service is collecting and evaluating seafood samples to assess the extent of any potential contamination or adulteration both within the current closed area and throughout the Gulf.

- NOAA Fisheries Service must follow a protocol developed in consultation with the FDA to re-open federal waters that have been closed as a result of oil from the Deepwater Horizon incident.
  - We have reopened (and will continue to reopen) portions of the closed area that were closed based on trajectories if data indicate oil never reached those areas.
  - We will reopen portions of the closed area from which oil has receded if we conclude through sampling and testing that the seafood within those areas is not contaminated or adulterated.
    - Priority sampling locations include those areas in the Gulf which were initially closed because of observed surface oil but which have not been impacted by oil for some time.
    - We are currently conducting sampling off western Terrebonne, LA, and W. FL, and will respond to the findings of testing conducted on those samples as quickly as possible.

Document ID: 0.7.19.1692.1

Deepwater Horizon MC252: Fishery Info
June 27, 2010

State Closure Background/Reopening Protocol

- States are responsible for closure of state waters.

- The Louisiana Department of Wildlife and Fisheries (LDWF) also has implemented precautionary closures of recreational and commercial fishing based on the best information the Secretary of the Department receives from field biologists, staff and trajectory models from NOAA.

- As of June 27, 2010, current closures encompass 2,125 square miles of state waters from Dulac to Plaquemines, as well as a portion of Chandeleur Sound (27% of LA saltwater fisheries) (maps attached and online at http://www.wlf.louisiana.gov/oilspill/, http://www.wlf.louisiana.gov/pdfs/news/ALL-CLOSURES.jpg, and http://www.wlf.louisiana.gov/pdfs/news/ALL-CLOSURES-2.jpg).

- Once reports of oil are received, LDWF initiates a field survey and immediate seafood testing in the suspected areas. Closures are subsequently made with the intent to be as safe as possible, while not closing any fishing areas unnecessarily. As test results come back clearing the area, affected waters are then reopened.

- LDWF is working closely with the Louisiana Department of Health and Hospitals and the Louisiana Department of Environmental Quality to conduct coast-wide sampling of fish, crabs and shrimp, to ensure all seafood harvested from the Gulf is a safe, quality product. To date, all seafood sampled from Louisiana has tested negative for hydrocarbons.

Coordination among State and Federal Management Authorities on Closures and Reopening

- Last week in New Orleans the FDA and NOAA held a meeting with the Gulf State fishery and health agency Directors, and other State leadership. They discussed re-opening protocols and confirmed that both FDA and NMFS are working under common seafood testing and analysis protocols. Through the meeting state representatives concurred that it was appropriate for all authorities to work under the same testing and analysis protocols.

- The discussion also covered laboratory preparedness and FDA estimates for supporting testing of state seafood samples. NMFS laboratories are online and processing federal waters samples and some samples from State waters and FDA and the states are coming online.

- Concurrently, there is concern about the ability to process adequate volumes of samples to support timely reopening when circumstances permit. There is ongoing work to expand lab processing capacity under current chemical testing methodologies and in also exploring alternative testing methodologies that might allow a reduced analysis period.

- FDA agreed to lead a state / federal work group that will continue that process and sustain regular communication around seafood testing procedures. Any new testing procedures would be validated

Document ID: 0.7.19.1692.1

against the NOAA testing protocols currently in use. The meeting was well received and a productive step forward for the seafood safety and surveillance program.

Economic Impacts

- Fishery closures are extremely difficult for local fishermen who are already experiencing economic hardship. They have affected recreational fishermen, the for-hire (charter and headboat) industry and associated shore-side businesses, and the commercial fishing industry, including fishermen, dealers, processors and ancillary industries.

- Fishermen throughout the Gulf are fearful for their livelihoods. On June 23, 2010, a charter captain in Orange Beach, Alabama, and participant in the BP Vessel of Opportunity program, committed suicide.

- In addition to being prohibited from traditional fishing grounds, some fishermen and dealers are reporting difficulty selling reef fish (grouper and snapper) harvested from open waters due to contamination concerns. Several Highly Migratory Species (tuna and billfish) tournaments have already been postponed in LA, MS, AL, and FL.
- Shore-side processors, wholesalers and retailers have also expressed concern that the BP Vessel of Opportunity program is actually discouraging many fishermen from fishing even though they may still have access to open harvest waters.

- No estimates of the effects of the oil spill on recreational and commercial fishing have been issued as of this time because the leak has not been stopped and the extent of impacts is still being monitored. However, NOAA is working to understand the economic impacts of the closure on affected fishermen:
  - NOAA Fisheries Service is monitoring commercial landings relative to recent average landings.
  - NOAA Fisheries Service worked collaboratively with the Gulf States Marine Fisheries Commission and state fishery agencies to improve the precision and timeliness of recreational data collection to help us better understand how the closure is impacting recreational fishing effort. Specifically, we increased the number of charter captain interviews conducted by the weekly For-Hire Survey (FHS) in each state and are working together to collect, enter and process those data on a faster track so we can produce fishing effort statistics at weekly, rather than bimonthly, intervals. Additionally, we have added questions to the FHS survey to obtain information on fishing trip cancellations directly related to the oil spill. This information will be used to help determine whether recreational fishermen are harvesting species, such as red snapper and greater amberjack, as quickly as projected or whether extended seasons may be warranted.
  - NOAA National Ocean Service's Office of Response and Restoration is evaluating the value of lost public use associated with recreational activities such as fishing, beach visitation, and other public uses as part of the natural resource damage assessment being carried out for the Deepwater Horizon oil spill. At this time, it is unknown when the natural resource damage assessment will be completed.

Document ID: 0.7.19.1692.1

- Also, NOAA is working with partner universities to develop monitoring plans that will help us understand the future impacts of the Deepwater Horizon spill on natural mortality, spawning potential and reproduction, carrying capacity and the Gulf of Mexico ecosystem.

Disaster Assistance

- On May 24, 2010, the Secretary of Commerce declared a fishery resource disaster in the Gulf of Mexico for the states of Mississippi, Louisiana, and Alabama. On June 2, 2010 the Secretary also declared a fishery resource disaster for Florida.

- These determinations pave the way for Congress to appropriate funds to address the economic effects of the Deepwater Horizon spill on affected fishermen and communities. Funds are generally distributed through qualifying states in accordance with plan submitted and approved by those states. An interstate authority, the Gulf States Marine Fisheries Commission, helped states to apply for and utilize federal disaster funding in the aftermath of hurricane Katrina.
- This is an unusual case for federal fishery disaster assistance due to the BP claims process, the new $20 billion escrow announcement and the expectation that BP is directly responsible for these damages.

- The administration has requested $15 million of supplemental funding as a backstop to address this disaster, as well as $5 million of economic development assistance through the Economic Development Administration. In addition, the administration is requesting unemployment coverage for this disaster, and the Small Business Administration is offering economic injury disaster loans, which can help fishermen and other affected businesses.
- NOAA Fisheries continues to work closely with affected fishing related businesses and state authorities to identify gaps in the current assistance process and to identify ways in which federal fishery disaster assistance can be of greatest utility to impacted fishermen and fishing related businesses.

Document ID: 0.7.19.1692.1

Fishery closures

- Latest % of GOM closed – 34%; last modified on July 4, 2010
- Max/min % (since the first closure) – 37%/2.8% on June 2, 2010 and May 2, 2010, respectively.
- Background materials attached: historical closing % and closure map.

· Total # of SCAT teams: initially + currently

Currently we have 5-6 teams every day in Houma and up to 10 teams daily out of Mobile Command. Scat has been going on every day for several weeks in Florida, but managed out of the Mobile command. Usually 2-3 teams in Florida (included in the count of 10 teams). The numbers of teams fluctuates a bit depending on weather and staff rotations, but safe to say that approximately 15 teams every day.

The teams are staffed with NOAA, NOAA contractors (e.g., RPI) and NOAA partners (e.g Cal OSPR)

Each team has at least one State, Federal, and RP representative. Generally there is an archaeologist too.

· Flow rate: timeline for different estimates + estimates themselves

Since day one, the Administration s deployments of resources and tactics in response to the BP oil spill have been based on a worst-case, catastrophic scenario.

- Initial estimate was 5,000 bbls a day

-Initial FRTG on May 27th. The independent analysis of the Flow Rate Technical Group has determined that the overall best initial estimate for the lower and upper boundaries of flow rates of oil is in the range of 12,000 and 19,000 barrels per day.

-June 15th - between 35,000 and 60,000 barrels per day

· Wildlife figures

- Turtles: total dead, total found alive & number (Xn) above normal/average
  - 601 turtles stranded
    - 444 found dead
    - 146 live turtles currently in rehabilitation
    - 7 live turtles that died in rehabilitation
    - 4 turtles released
  - The number of sea turtle strandings is much higher than the number documented in recent years. For example, 234 turtles were stranded between June 1 and July 4. The historical number of strandings during this period is between 5 and 25 from Louisiana to the Florida panhandle.

- Birds: total dead, total found alive & number (Xn) above normal/average
    - 2327 birds collected
        - 1387 found dead
        - 940 alive and in rehabilitation
        - 410 birds released

- Marine mammals: total dead, total found alive & number (Xn) above normal/average
    - 58 marine mammals stranded (57 dolphins and 1 sperm whale)
        - 52 dolphins and 1 whale found dead
        - 1 dolphin currently alive and in rehabilitation
        - 3 dolphins that died in rehabilitation
    - 1 dolphin released
    - The number of marine strandings is higher than the number documented in recent years. For example, 27 dolphins were stranded between June 1 and July 4. The historical number of strandings during this period is between 0 and 11 from Louisiana to the Florida panhandle.

· Latest total # of barrels & gallons spilled

- Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
    - On March 24, 1989 the oil tanker *Exxon Valdez* ran aground in Prince William Sound Alaska, resulting in eleven million gallons of oil spilled. *I (Joe) don't know the exact time (number of hours) of the release, I will continue to look into this.*
    - The spill affected over 9,000 miles of shoreline, which had immense impacts on natural resources, local industries and communities, subsistence livelihoods, and tourism.
- Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth
    - Ixtoc - The largest oil spill in North America occurred in the Gulf of Mexico. The 200-foot-deep exploratory well, Ixtoc I, blew out on June 3, 1979, in the Bay of Campeche, Mexico, releasing 10,000 - 30, 000 barrels (0.4 - 1.2 million gallons) per day for nine months. Nearly 500 dispersant air sorties were flown in Mexico. Manual cleanup in Texas was aided by storms. Though the blowout preventer (BOP, valve designed to seal off a wellhead) failed, injection of metal and concrete balls into the well slowed the release. By the time the well was brought under control in March 1980 by drilling two relief wells to relieve pressure, an estimated 113 million to over 300 million gallons of oil had spilled (10 times the amount of oil spilled by the Exxon Valdez). Oil travelled 800 miles to the north, oiling more than 150 miles of shoreline in Texas and unknown miles of shoreline in Mexico.

· NOAA personnel

    - Total # regularly in Gulf states (by State)

    - Total # on travel orders in Gulf states (by State)

· Date of seafood protocols announcement: Tuesday, June 29

· Amount of boom deployed

Current 2,957,930 ft

· Amount of oil recovered (progression)

- Initially (date?)
  - Date of incident: night of April 20th, on April 23rd *Oily water recovered: 7,600 gallons*
- After 1 month
  - By May 21st more than 8.9 million gallons of an oil-water mix have been recovered.
- After 2 months
  - By June 21st, Oily water recovered: nearly 23.9 million gallons
- Latest figure
  - By July 5, Oily water recovered: nearly 28.3 million gallons

Amount of aerial and subsea dispersant deployed (progression)

- Initially (date?)
  - Date of incident: night of April 20th, on April 23rd *Dispersant used: 1,900 gallons*
- After 1 month
  - By May 21st - Approximately 670,000 gallons of total dispersant had been deployed—600,000 on the surface and 70,000 subsea.
- After 2 months
  - By June 21st - Surface dispersant used: more than 959,000 gallons
  - Subsea dispersant used: more than 468,000 gallons
  - Total dispersant used: more than 1,427,000 gallons
- Latest figure
  - By July 5th, Surface dispersant used: more than 1.06 million gallons
    Subsea dispersant used: more than 634,000 gallons
    Total dispersant used: more than 1.69 million gallons

- Results of Brooks McCall data
  - Confirms the existence of a previously discovered cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead.
  - TPH concentrations at these depths are in concentrations of about 1-2 ppm. Between that depth and the surface mix layer, which is defined as 450 feet below the surface, concentrations fell to levels that were not readily discernable from background levels.
  - Cloud is most concentrated near the source of the leak and decreases with distance from the wellhead.
  - Beyond six miles from the wellhead, TPH concentrations drop to ND levels.
  - DO levels remained above immediate levels of concern
- Results of Weatherbird
  - Hydrocarbons (HCs) found in surface samples taken at the Slick 1 source, 40 nautical miles northeast from the well head, were consistent with the BP oil spill source;
  - HCs found in samples from Station 07—45* nautical miles northeast from the well head—at the surface, at 50 meters and at 400 meters are petroleum-derived but in concentrations too low to confirm the source;

    - HCs found in samples taken from Station 01, 142 nautical miles southeast of the well head, at 100 meters and 300 meters were not consistent with the BP oil spill source.
- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what they are doing
    - R/V Nancy Foster-Loop Current cruise; underway
    - R/V Delaware II-pelagic fish long-line survey; underway
    - R/V Oregon II-shrimp and groundfish survey; underway
    - R/V Gordon Gunter-marine mammal survey; underway
    - R/V Pisces-alongside Pascagoula (next scheduled cruise is reef fish survey)
    - R/V Thomas Jefferson-alongside Key West (next cruise is non-DWH hydrographic survey)

· Probability of oil hitting more shoreline (long-term projections)

Considering these factors, the NOAA model indicates:

The coastlines with the highest probability for impact (81 to 100 percent) extend from the Mississippi River Delta to the western panhandle of Florida where there has been and will likely continue to be oil impacts.

Along U.S. Gulf of Mexico shorelines, the oil is more likely to move east than west, with much of the coast of Texas showing a relatively low probability of oiling (ranging from less than one percent in southern Texas to up to 40 percent near the Louisiana border).

Much of the west coast of Florida has a low probability (20 percent down to less than one percent) of oiling, but the Florida Keys, Miami and Fort Lauderdale areas have a greater probability (61 to 80 percent) due to the potential influence of the Loop Current. Any oil reaching this area would have spent considerable time degrading and dispersing and would be in the form of scattered tar balls and not a large surface slick of oil.

There is a low probability of shoreline impacts from eastern central Florida up the Eastern Seaboard (20 percent diminishing to less than one percent). Potential impacts become increasingly unlikely north of North Carolina as the Gulf Stream moves away from the continental U.S. at Cape Hatteras. If oil does reach these areas, it will be in the form of tar balls or highly weathered oil.

· Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)

· Other factoids

- % of U.S. wetlands in LA - Currently, Louisiana has 30% of the total coastal marsh and accounts for 90% of the coastal marsh loss in the lower 48 states (http://www.americaswetland.com).

- % of fisheries dependent on Gulf marshes/habitats (70-80%?)
    - Approximately 75% of the Nation's commercial fish and shellfish depend on estuaries at some stage in their life cycle. Estuaries themselves depend on their wetlands to maintain water quality and provide the basis for food chains that culminate in human

consumption of seafood. Many estuarine-dependent species have even closer ties to wetlands in that they feed, take refuge, or reproduce in the wetlands themselves. Without wetlands, these fish and shellfish cannot survive.

- Value of Gulf of Mexico commercial and recreational fisheries:
    - Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.
        - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
        - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)
    - Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).
    - State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

The current closure area was last modified on July 4, 2010, and measures 81,181 square miles and covers about 34% of the Gulf of Mexico EEZ. The smallest closure was on May 2, 2010, and covered 2.8% while the largest closure area was 37% of the Gulf of Mexico EEZ on June 2, 2010.

Background – Closure area history

May 2, 2010 – 2.8%

May 7, 2010 – 4.5%

May 11, 2010 – 6.6%

May 12, 2010 – 7.3%

May 14, 2010 – 8%

May 17, 2010 – 10%

May 18, 2010 – 19%

May 21, 2010 – 19.8%

May 25, 2010 – 22.4%

May 28, 2010 – 25%

May 31, 2010 – 26%

June 1, 2010 – 31%

June 2, 2010 – 37%

June 4, 2010 – 32%

June 5, 2010 – 33%

June 7, 2010 – 32%

June 16, 2010 – 33%

June 21, 2010 – 36%

June 23, 2010 – 33%

June 28, 2010 – 33%

July 4, 2010 – 34%

Received(Date): Tue, 06 Jul 2010 16:31:08 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Action Items
To: Margaret Spring <Margaret.Spring@noaa.gov>,Mary Glackin <Mary.Glackin@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: David Kennedy <David.Kennedy@noaa.gov>, Jen Pizza <Jen.Pizza@noaa.gov>

Margaret and Mary,
We talked about action items. I didn't want to go through the entire list but did want to go through a few of the items we have been tracking since late last week as well as today. I did not include the work on the long-term trajectory (which happened over the weekend), daily updates and strategic planning as we discussed that during our meeting.
v/r
Dave

1. X-Prize - Craig and I talked to Francis. We owed them a POC with the Coast Guard RRT Co-Chair (completed last Thursday). We had another request for people who could review criteria. I am providing that input tomorrow.
2. Low Altitude Air flight restrictions. Worked out over the weekend down at the UC and with Houma and Mobile. CG understood essential mission need and our proposal for executing low altitude ops w/ the exception of restricting access to two relatively small sections of the airspace until after 5 pm local was agreed upon.
3. NOAA vessel schedule for rest of FY for DWH. Conference call today with Phil, Dave, me, Craig, Steve and others. We reviewed draft by Steve and Science Box and agreed on way forward. Will be sent to LO's for comments nlt the end of this week, then to leadership by early next week.
4. NOAA fleet schedule for FY11 wrt DWH. By 23 July will have draft with expectation to deliver product to leadership by week of 26 July for review.
5. Dispersant 2-pager (final to leadership by 1600 today)
6. Wildlife 2-pager (routed for comments by 10 today with final at COB)
7. Meeting with EPA on dispersants and other issues (Dr. Robinson as main POC. We are waiting on details but understand 13 Jul is tentative date from 1130-1230)
8. Organizational Chart changes (Will have by tonight)
9. Staffing Plan (Will be in calendar format by tomorrow COB)
10. TEDs and Mobile effort to use fishing vessels with nets and sorbents (Still waiting on info from field, expect to have something by tomorrow a.m.)
11. Correspondence plan for socializing to EPA, CG, FDA, others (AJAY is working, will have something by end of work)
12. Turtle issue between Houma and Mobile. First meeting was overtaken by litigation discussion. Will monitor follow up meetings in region to ensure consistency of meeting our mission in Mobile.
13. Pay Cap issue. (WFMO has been working this and will have list of impacted employees nlt tomorrow).
14. Governor's call tomorrow on Mississippi R. flow and oil (Charlie Henry will be on call, talking points to be completed by this evening coordinating with Christina Durham)
15. Request for Presidential Commission speaker (Dave K. coordinating to get speaker, will send e-mail to leadership). Also POC at CG for joint MMS/CG investigation (Dave W. will get best POC and forward tomorrow).

Received(Date): Wed, 07 Jul 2010 13:05:41 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: [Fwd: Subsea Oil and Gas Legislation]
To: DWH.Leadership@noaa.gov, "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Subsea Oil and Gas Legislation.eml
Jessica_Kondel.vcf

fyi--Senator Nelson plans to offer this as an amendment to the larger
Senate oil spill bill during mark-up.

Received(Date): Wed, 07 Jul 2010 12:15:13 -0400
From: "Gonzalez-Rothi, Sara (Bill Nelson)"<Sara_Gonzalez-Rothi@billnelson.senate.gov>
Subject: Subsea Oil and Gas Legislation
To: Jessica Kondel <Jessica.Kondel@noaa.gov>
image001.png
image002.png
image003.jpg
image004.png

Hi Jessica,

I wanted to give you a heads-up that Senator Nelson in tends to file a bill next week dealing with subsea oil and gas ("plumes" as the media likes to call it). The bill would direct NOAA to review its technological capabilities and plans for detecting, monitoring, and mapping subsea oil and then create a program within the Office of Restoration and Response to map subsea hydrocarbons in the future. Here is a summary:

Summary of the bill:

This legislation directs NOAA to conduct a rapid and comprehensive review of their testing methods and current technology for detecting, monitoring, and mapping subsea hydrocarbons— both oil and gas, visible and dissolved invisible hydrocarbons. This review will be done within 45 days.

The review will address:

1) Dispersants. How should we use them at various depths, temperatures, and pressures?

2) Technology for detecting oil and gas at various depths. Do we have the technology to detect oil and gas even in small concentrations?

3) Fingerprinting. It currently takes sending water samples to a lab that takes days to determine if the hydrocarbons match oil from the Deepwater Horizon well. Is there technology that could speed this process up?

4) Trajectory. Where are the subsea hydrocarbons in what concentrations and where they are going? We need a visual trajectory map.

5) Effects of subsea hydrocarbons on all levels of the food web. Do these subsea hydrocarbons kill animals, impact their growth, impact their reproduction, and do the chemicals build up in the tissues of fish and mammals such that predators higher on the food web might be unsafe for human consumption down the road?

Upon completion, a Subsea Hydrocarbon Monitoring and Assessment Program will be established within the Office of Response and Restoration based on recommendations from the reviewThis will be a $15 million dollar program funded from the Oil Spill Liability Trust Fund.

Thanks,

Sara

Sara Gonzalez-Rothi

Everglades Fellow

Office of Senator Bill Nelson

(202)224-5274 (ph)

(202)228-1632 (fax)

Connect with Bill:

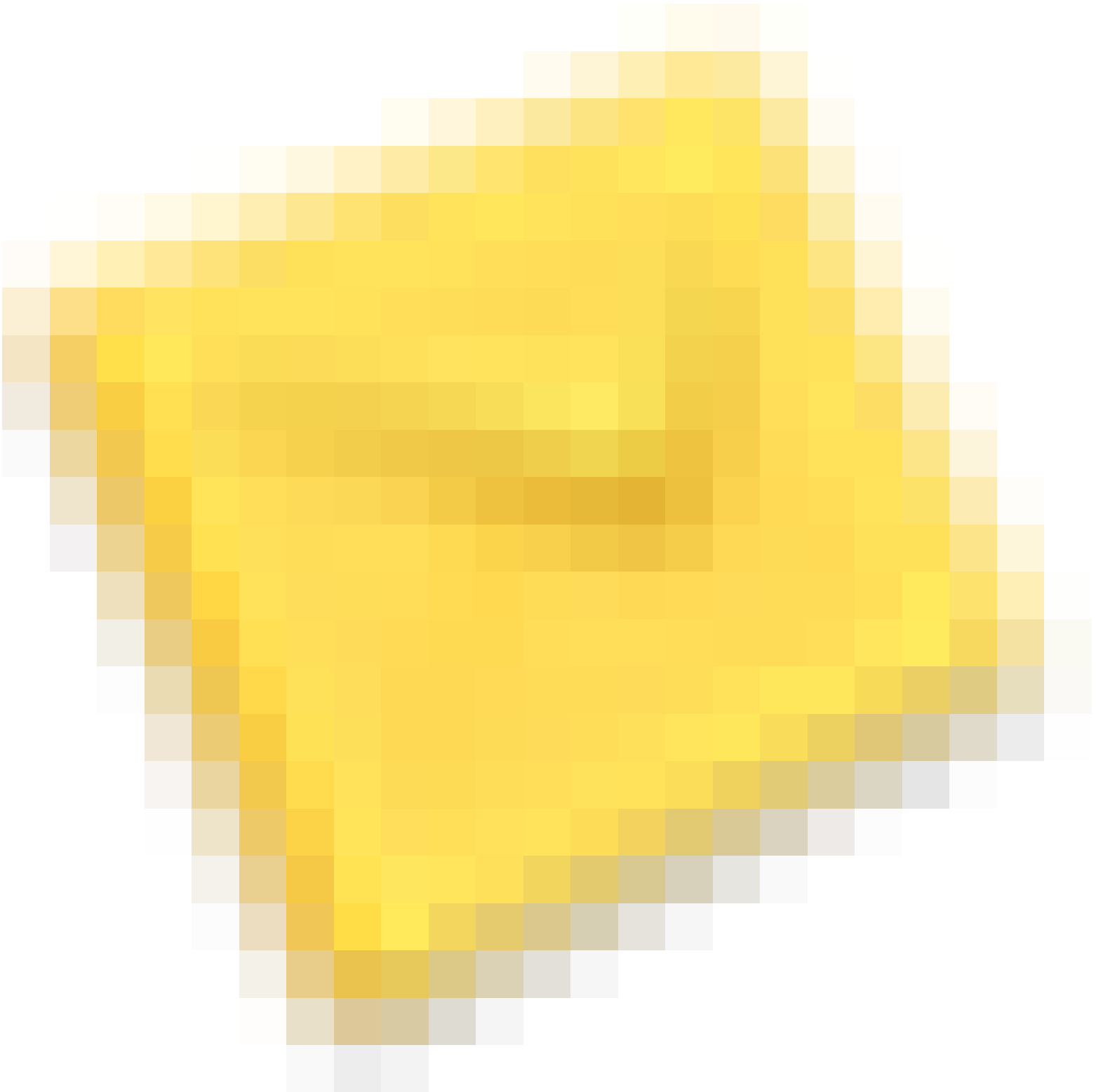




Document ID: 0.7.19.1787.1.1







Document ID: 0.7.19.1787.1.4

Jessica Kondel

Legislative Affairs Specialist

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Version
2.1

Received(Date): Wed, 07 Jul 2010 13:22:14 -0400
From: Cynthia.Decker@noaa.gov
Subject: Dispersants webinar OAR experts
To: William.Connor@noaa.gov
Cc: Doug.Helton@noaa.gov, steve.murawski@oaa.gov, Robert.Haddad@noaa.gov,Jason.Rolfe@noaa.gov, DWH.Leadership@noaa.gov, dwh.staff@noaa.gov,timothy.gallagher@noaa.gov, Michael.Uhart@noaa.gov

Bill,

I have been working with Mark and Jason on this dispersants issue at the NIC. Last week I worked with OAR to identify several individuals that should be included on this webinar. These include Kelly Goodwin (AOML, water quality) kelly.goodwin@noaa.gov, George Halliwell (AOML, modeling) george.halliwell@noaa.gov, Robert Hallberg (GFDL, modeling) robert.hallberg@noaa.gov. We'd like to ensure that these folks are involved if the webinar does happen. Please include me on future emails on this topic as well.

Thanks,
Cynthia

Bill,

I have been working with Mark and Jason on this dispersants issue at the NIC. Last week I worked with OAR to identify several individuals that should be included on this webinar. These include Kelly Goodwin (AOML, water quality) kelly.goodwin@noaa.gov, George Halliwell (AOML, modeling) george.halliwell@noaa.gov, Robert Hallberg (GFDL, modeling) robert.hallberg@noaa.gov. We'd like to ensure that these folks are involved if the webinar does happen. Please include me on future emails on this topic as well.

Thanks,
Cynthia

Received(Date): Thu, 08 Jul 2010 11:46:50 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 7, 2010
To: Caren.Madsen@noaa.gov, Adele.Stevens@noaa.gov, Amanda.Hallberg@noaa.gov,asalzman@ceq.eop.gov, Dewey.Amy@epa.gov,Andrea Bleistein <Andrea.Bleistein@noaa.gov>, Andrew.Winer@noaa.gov,maciorowski.anthony@epa.gov, Beth.Dieveney@noaa.gov, perciasepe.bob@epa.gov,Bobby.Whithorne@dhs.gov, "Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>,Tulis.dana@epa.gov, David.Holst@noaa.gov, dietrich.debbie@epa.gov,Thompson.diane@epa.gov, Drew.schneider@dhs.gov, Eric.Schwaab@noaa.gov,Fayrouz.saad@dhs.gov, gguzy@ceq.eop.gov, gnelson@who.eop.gov,Jainey.Bavishi@noaa.gov, Woodka.Janet@epa.gov, Jarrod.bernstein@dhs.gov,Jim.Lecky@noaa.gov, John.Gray@noaa.gov, John.Rapp@noaa.gov,JCarson@ceq.eop.gov, Jon_Jarvis@nps.gov,"Jourdane, Jonathan" <Jonathan_Jourdane@ios.doi.gov>,Kanninen.Daniel@epamail.epa.gov, Gage.Katharine@epamail.epa.gov,Kellyn.Blossom@dhs.gov, lrobinson@doc.gov, Margaret.Spring@noaa.gov,MWeiss@ceq.eop.gov, shapiro.mike@epa.gov, Gguernica@ceq.eop.gov,Noah.Kroloff@dhs.gov, Owens.Stephanie@epamail.epa.gov, Ray_Rivera@ios.doi.gov,Sussman.Bob@epa.gov, Rowan_Gould@fws.gov, Sternberg.Shira@epamail.epa.gov,Stephanie.tennyson@dhs.gov, Tracy.Hannah@dhs.gov
image001.emz
oledata.mso

Please find the update for July 7.

Claims Update – BP has now posted all claims statistics on its website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The information, which is updated daily, includes county statistics, response times, personnel deployed, amounts paid, individual and business claims statistics including reasons for claims, and more.

BP's Washington, DC Office

Note: if you would like to be removed from this distribution list, please respond accordingly.

Topline

ξ **Relief Wells Technical Update** – The *Development Driller III*, drilling the first relief well, has drilled ahead to 17,746 feet and completed its eighth "ranging" run. Ranging will enable the drilling team to precisely locate the Macondo well bore and ultimately drill directly into it. A video overview on the progress of the relief wells and an explanation of the bottom kill procedure is available on the BP website at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

ξ **Long Term Containment** – The *Helix Producer* is on location and connected to the floating system. The floating system will be connected to the riser over the next 2-3 days. This system is designed to add up to 25,000 barrels per day of containment capacity.

ξ **Claims Update** – BP has now posted all claims statistics on its website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The information, which is updated daily, includes county statistics, response times, personnel deployed, amounts paid, individual and business claims statistics including reasons for claims, and more.

ξ **Enhancements to Vessels of Opportunity (VOO) Program** – BP has made a number of enhancements to the VOO program. Through these modifications, the program will more effectively deploy boats to oil recovery activity and better utilize local commercial and charter fishing vessels to advance the effectiveness of the Gulf of Mexico response. Operational characteristics developed by the U.S. Coast Guard and BP represent existing best practices and improvements suggested by program participants. Enhancements include:

- Leveraging the local Branch offices, with boats within each Branch organized into response Task Forces and Strike Teams to meet key operational demands. The Task Forces report into the Branch operations, improving how we better bring resources into the response.
- Improved air surveillance through the use of Tyndall Air Force Base.
- Increased vessel rotation frequency, subject to operational needs.
- Increased focus on local, in-state vessel sourcing.
- Focused on commercial and charter fishing vessel use with the goal of better oil recovery; recreational craft will be used only when no suitable local commercial vessels are available.
- Clarifying the operation pool size to ensure it is appropriate and includes the right type of vessels.

The Vessels of Opportunity program employs local commercial fishing vessels to assist in the company's response in the Gulf of Mexico and minimize the impact of the spill on the region's people, environment and economy. To date, over 3,000 vessels have been activated for duty through the program across four states - Louisiana, Alabama, Mississippi and Florida. Link to Press Release:

http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063470

Offshore – Containment and Surface Response

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start

date.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,746 feet below sea level. It is about 15 feet away from the Macondo well bore, and within 200 feet of its target depth. Work has progressed to the "ranging" stage where special tools are run into the well to precisely locate the MC252 casing. Eight ranging runs have been completed. *For a detailed explanation of this process, visit BP's website* at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039

ξ The second relief well (work being performed by *Development Driller II*) has drilled to 13,871 feet below sea level. Casing and cementing are completed to this point and the rig is preparing to drill ahead to the next casing point at 15,644'. Drilling began on May 16.

Containment and Recovery

- Lower Marine Riser Package (LMRP) Cap – Approximately 16,536 barrels of oil have been captured through the LMRP cap during the last 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared.
- Near Term Containment: Q4000 Direct Connect – This containment system is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Approximately 8,225 barrels of oil were flared.
- Over the past 24-hour period, 57.5 million cubic feet of natural gas were flared from the Enterprise and the Q4000.
- Long Term Containment: Permanent Riser Systems – It is anticipated that a floating riser containment system will be connected to the *Helix Producer* vessel in the next week. This system will be capable of collecting an additional 25,000 barrels per day from the blowout preventer and will bring total containment capacity to roughly 50,000 barrels per day. This system will also be able to disconnect from the ship during a hurricane.

-

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

State Summaries: Operations, Shoreline Impact & Claims

Filing Claims / Claims Offices – All claims data is now posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. Detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

LOUISIANA

OFFSHORE: 'A Whale' continued testing. No burn operations due to wind conditions.

SHORELINE: Branches preparing for rapid response to in several locations from St. Bernard Parish to Grand Isle. Operations continued throughout Barataria Bay, South Pass and Grand Terre.

INSHORE: 12 fishing vessel skimming Task Forces are currently stood down due to weather.

WILDLIFE: 178 wildlife specialists utilized 5 aircrafts and 82 boats to search for and recover oiled birds. 2 birds were collected. 32 birds are expected to be released on 7 July.

AIR OPERATIONS: No dispersant flights today due to weather.

BOOM: Deployed 3,500' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Rough seas kept all cleanup personnel off of barrier islands. Beach cleanup crews responded to reports of tarballs and tar mats in multiple locations in Hancock County, and conducted cleanup ops. Light impact reported from Pass Christian to Long Beach, where day and night crews continued cleanup ops.

NEARSHORE: Ops were significantly impacted by heavy winds and seas. VOO Task Forces conducted limited surveillance operations in protected waters.

OFFSHORE: Ops were significantly impacted by heavy winds and seas.

BOOM: Continued to deploy Magnolia Boom and backup sorbent and snare boom in Heron Bay. Boom gates at Biloxi Bay and St. Louis Bay remained closed and are tended by VOO. Conducted boom damage assessment and maintenance throughout state waters. Deployed 12,100' of boom.

ALABAMA

SHORELINE: Continue beach cleanup in Baldwin County from Fort Morgan to Perdido Pass. Responded to heavy tarball impact on Pelican Island. Conducted beach and harbor patrols on Dauphin Island and Bayou La Batre. Successful night ops resulted in 97K lbs of oily sand and tarball removal in Gulf Shores.

NEARSHORE: Ops were significantly affected due to heavy winds and seas.

OFFSHORE: Ops limited due to weather.

BOOM: Continue to assess damaged boom in Baldwin and Mobile Counties. Deployed no boom due to weather.

FLORIDA

SHORELINE: Continued mechanical and manual cleanup on Escambia, Okaloosa and Walton County beaches. Continued beach surveillance on Bay, Gulf and Franklin County beaches. Weather adversely impacted cleanup ops throughout the state.

NEARSHORE: All Task Forces ready to deploy on 30 minute recall. Seven VOO Task Forces conducted limited surveillance ops in protected waters.

OFFSHORE: Task Force remained ready to deploy south of Pensacola during breaks in weather.

BOOM: Boom deployment, inspection and maintenance conducted throughout Escambia, Okaloosa, Walton, Franklin, Gulf, Bay, Walton and Wakulla Counties. Deployed 16,000' of boom.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Vessels of Opportunity – to report and register boats available to assist with response	(281) 366-5511
Training – for questions about training requirements, times and locations, and to sign up\	(866) 905-4492 or (866) 647-2338
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
Joint Information Center – Robert, LA – Media and information center	(985) 902-5231 or (985) 902-5240
Joint Information Center – Mobile, AL – Media and information center	(251) 445-8965
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
BP Family – and third-party contractor hotline	(281) 366-5578
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.deepwaterhorizonresponse.com	



Karen St John

BP America

Sr. Director, Regulatory Affairs



CLAIMS	
State	$ Disbursed
TX	$3,296,245
LA	$77,025,802
MS	$15,328,316
AL	$29,416,292
FL	$25,561,278
GA	$760,065
Other	$2,142,826
Total	**$153,530,824**

Gulf of Mexico Incident Daily Dashboard

Period: 7/6/10 6AM – 7/7/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **All Claims Data now appears on BP website**
- **Weather has severely limited surface response activities in the past 9 days, including burns, boom deployment and dispersant applications.**
- **U.S. Coast Guard launches new website.**
- **Enhancements to Vessels of Opportunity Program**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	218	**682,002**
Aerial & Vessel dispersants applied (gals)	473	**1,070,070**
Subsea dispersants applied (gals)	11,654	**657,465**
In-situ Burns	0	**275**
In-situ Burn (bbls burned)	0	**237,950**
LMRP CAP/Enterprise Oil Recovered (bbls)	16,536	**505,511**
LMRP CAP+Q4000 Gas flared (mmscf)	57.5	**1,529.2**
Q4000 Oil recovered (bbls)	8,225	**176,336**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	827	692	1,127	522	0	**3,168**
Barges	261	77	78	30	0	**446**
Other Vessels	1,337	305	235	153	30	**2,060**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**563**
Fixed Wing Aircraft	_	_	_	_	_	**36**
Helicopters	_	_	_	_	_	**79**
Total:	**2,425**	**1,074**	**1,440**	**705**	**30**	**6,352**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	1,857,791	406,850	593,700	435,600	**3,293,941**
Boom Staged	455,400	76,450	164,450	173,800	**870,100**
Ordered					**617,234**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	_	**3,019**
Personnel	_	**46,428**

Image not available for this document, ID: 0.7.19.1807.2

CLAIMS

Total	$153,530,824

SURFACE / SUBSEA OPERATIONS

	682,002
	1,070,070
	657,465
	275
	237,950
	505,511
	1,529.2
	176,336

BOOM (feet)

	3,293,941
	870,100
	617,234

EQUIPMENT

					3,168
					446
					2,060
					563
					36
					79
2,425	1,074	1,440	705	30	6,352

MISCELLANEOUS

	3,019
	46,428

Received(Date): Thu, 08 Jul 2010 23:56:25 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexio Update for July 8 2010
image001.emz
oledata.mso

Topline

ξ **New Skimming Vessel Deployed** - BP, Edison Chouest Offshore (Chouest) and Ocean Therapy Solutions (OTS) introduced the "Ella G," a massive platform supply vessel equipped with four centrifuge devices that will be deployed to the Gulf of Mexico for oil spill cleanup operations. The vessel provides the potential to clean up to 800,000 gallons of oily water a day.

ξ **Relief Wells Update** – The *Development Driller III*, drilling the first relief well, has drilled ahead to 17,780 feet and completed its ninth "ranging" run. The rig plans to drill ahead to 17,830 feet and perform a 10th ranging run. Ranging uses magnetic signals to precisely locate the steel casing in the Macondo well bore. A video overview on the progress of the relief wells and an explanation of the bottom kill procedure is available on the BP website at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

ξ **Claims Update** – BP has now posted all claims statistics on its website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The information, which is updated daily, includes county statistics, response times, personnel deployed, amounts paid, individual and business claims statistics including reasons for claims, and more.

ξ **Key claims statistics – July 08, 2010**

ξ $157.6 million paid

ξ 51,000 checks written since May 3 (9 weeks)

ξ 118,500 calls received 6 second average call wait time

ξ 14,700 claims submitted online (as of June 29)

ξ 35 field offices, with translation capability at 9

ξ 100,700 total claims

ξ 1300 member claims team

ξ 5 day average time from "claim to paid" for individuals who have received checks

ξ 8 day average time from "claim to paid" for commercial entities who have received checks

ξ More than 45000 claims are awaiting documentation

ξ More than 12,800 claims have "contact difficulties"
(All numbers are rounded)

ξ **Enhancements to Vessels of Opportunity (VOO) Program** – New operational characteristics developed by the U.S. Coast Guard and BP represent existing best practices and improvements suggested by program participants. Through these modifications, the program will more effectively deploy boats to oil recovery activity and better utilize local commercial and charter fishing vessels to advance the effectiveness of the Gulf of Mexico response. The VOO program employs local commercial fishing vessels to assist in the company's response in the Gulf of Mexico and currently has more than 3,000 vessels activated for duty across four states - Louisiana, Alabama, Mississippi and Florida. Link to Press Release: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063470

ξ **New Government Website** – On Wednesday, the U.S. Government announced launch of a new website for information related to the Gulf response. The website is located at: www.restorethegulf.gov.

Offshore – Containment and Surface Response

New Skimming Vessel Deployed

BP, Edison Chouest Offshore (Chouest) and Ocean Therapy Solutions (OTS) introduced the "Ella G," a massive platform supply vessel equipped with four centrifuge devices that will be deployed to the Gulf of Mexico for oil spill cleanup operations. The vessel provides the potential to clean up to 800,000 gallons of oily water a day. The deck capacity of the Ella G is 273,000 gallons.

The Ella G is a supply vessel that has been reconfigured with the latest skimmer and centrifuge technology into a flexible oil spill response platform. Combining innovation with cutting-edge technology, it is the first step toward a new generation of oil spill response.

- The Ella G is 280 feet in length with a beam of 64 feet and can operate in deep water and rough seas.
- The combination of these technologies and processes went from concept by engineers to being deployment ready on the Ella G in only 10 days.
- The V-20 CINC centrifuge is among the most advanced technologies being used in the fight.

- The TransRec 150 skimmer is among the most advanced skimmers available.
- J-formation of boom deployment funnels oil to the skimmer from an area of 125 meters wide on the surface of the water.
- These technologies have all been tried, tested, and proven separately and are now being brought together for the first time.

Deployment of the Ella G brings the number of OTS centrifuge devices deployed in the Gulf to 9. BP demonstrated its commitment to bring new technology and response capacity to the Gulf with orders for 32 OTS centrifuges. BP expects to deploy all 32 by the end of August, weather permitting.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,780 feet below sea level. It is about 15 feet away from the Macondo well bore, and within 200 feet of its target depth. Work has progressed to the "ranging" stage where special tools are run into the well to precisely locate the MC252 casing. Nine ranging runs have been completed. Drilling began on May 2. *For a detailed explanation of this process, visit BP's website* at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039

ξ The second relief well (work being performed by *Development Driller II*) has drilled to 13,871 feet below sea level. Casing and cementing are completed to this point and the rig is preparing to drill ahead to the next casing point at 15,644'. Drilling began on May 16.

Containment and Recovery

- Lower Marine Riser Package (LMRP) Cap – Approximately 16,659 barrels of oil have been captured through the LMRP cap during the last 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared.
- Near Term Containment: Q4000 Direct Connect – This containment system is connected directly to the BOP and carries oil and gas through a manifold and hoses to the Q4000 vessel. Because the Q4000 does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Approximately 7,919 barrels of oil were flared.
- Over the past 24-hour period, 57.6 million cubic feet of natural gas were flared from the *Enterprise* and the Q4000.
- Long Term Containment: Permanent Riser Systems – It is anticipated that a floating riser containment system will be connected to the *Helix Producer* vessel in the next week. This system will be capable of collecting an additional 25,000 barrels per day from the blowout preventer and will bring total containment capacity to roughly 50,000 barrels per day. This system will also be

able to disconnect from the ship during a hurricane. A second system is being fabricated and installed to provide additional containment capacity, if needed.

-

BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

State Summaries: Operations, Shoreline Impact & Claims

Filing Claims / Claims Offices – All claims data is now posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. Detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

LOUISIANA

OFFSHORE: Skimmers were all on weather stand down. No burn operations due to wind conditions.

SHORELINE: Branches are preparing resources for rapid response to likely oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre. Currently only light oiling found. Heavy oil impact is down.

INSHORE: 12 fishing vessel skimming Task Forces are currently stood down due to weather.

WILDLIFE: 182 wildlife specialists utilized 82 boats to search for and recover oiled birds. 18 birds were collected. 32 birds were released.

AIR OPERATIONS: 1 dispersant flight today, 1,000 gallons dispersed.

BOOM: Deployed 0' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Landed beach cleanup crews on Petit Bois and Horn Island to respond to moderate to heavy tarball impact. Beach cleanup crews responded to reports of tarballs and tarmats along 6m stretch of beach in Hancock Co. Light impact was reported from Pass Christian to Long Beach, where day and night crews continued cleanup ops. Cleanup crews responded to light to moderate tarball impact on numerous beaches in Jackson County. Local officials closed beaches from Nicholson Avenue to Silver Slipper Casino in Bayou Caddy due to heavy oil impact.

NEARSHORE: Ops were again impacted by rough seas. Task Force conducted oil reconnaissance in protected waters around barrier islands. VOO TF conducted limited surveillance ops in protected waters. Skimming assets are in position to recover oil in MS Sound when seas subside.

OFFSHORE: Group 700 pre-positioned assets to protect MS Sound tomorrow, weather permitting.

BOOM: Boom gates at Biloxi Bay and St. Louis Bay remained closed and are tended by VOO. Trained additional VOO to backfill vessels used for gate tending ops. Conducted boom damage assessment and maintenance throughout state waters. Completed boom deployment in St. Louis Bay. Deployed snare and sorbent boom in Heron, Grand and St. Louis Bays. Deployed 600' of boom in past 24 hrs.

ALABAMA

SHORELINE: Continued beach cleanup in Baldwin County from Fort Morgan to Perdido Pass and in Mobile County on Dauphin Island beaches. Responded to numerous reports of staining and tarballs left at high tide line at Gulf Shores and Orange Beach. Responded to reports of ribbons of mousse washing ashore on Orange Beach.

NEARSHORE: Operations were again impacted due to rough seas. Task Force conducted oil reconnaissance in the vicinity of Mobile Bay. Seven VOO Task Forces conducted limited surveillance operations in protected waters. VOO training was conducted in Orange Beach and Dauphin Island. A 35 foot section of pipe boom became disconnected in Perdido Pass. Nearshore assets retrieved and replaced the section of boom.

OFFSHORE: Group 700 pre-positioned assets to protect state waters tomorrow, weather permitting.

BOOM: Continue to assess damaged boom in Baldwin and Mobile Counties. Continued deploying boom around the interior islands in Mobile Bay. Deployed 600' of boom in past 24 hrs.

FLORIDA

SHORELINE: Continued mechanical and manual cleanup on Escambia, Santa Rosa, Okaloosa and Walton Co. beaches. Continued beach surveillance on Bay, Gulf and Franklin Co. beaches.

NEARSHORE: Task Force conducted oil reconnaissance in the Panama City area. Task Forces are standing by in the Pensacola area ready to deploy when seas subside. Rough seas continued to hamper skimming ops. Three VOO Task Forces conducted limited surveillance ops in protected waters. Continued to re-stage skimming assets to address projected westward movement of oil.

OFFSHORE: Teams are positioned South of Pensacola Beach and ready to conduct skimming ops, weather permitting.

BOOM: Deployed boom in Okaloosa and Wakulla Co. Continued boom maintenance in Walton, Bay, Gulf and Franklin Co. Army Corps of Engineers has approved the near term deployment of supplemental boom in Choctawhatchee Bay at Tucker Bayou in the Intercoastal Waterway. Deployed 2,400' of boom in past 24 hrs.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816

Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs


B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$3,465,100
LA	$77,878,191
MS	$15,517,144
AL	$30,513,105
FL	$27,130,311
GA	$791,742
Other	$2,299,922
Total	**$157,595,515**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/7/10 6AM – 7/8/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **All Claims Data now appears on BP website**
- **U.S. Coast Guard launches new website: www.restorethegulf.gov**
- **Over $157 million in claims paid**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	156	**682,158**
Aerial & Vessel dispersants applied (gals)	1,245	**1,071,315**
Subsea dispersants applied (gals)	11,779	**669,244**
In-situ Burns	0	**275**
In-situ Burn (bbls burned)	0	**237,950**
LMRP CAP/Enterprise Oil Recovered (bbls)	16,659	**522,170**
LMRP CAP+Q4000 Gas flared (mmscf)	57.6	**1,586.8**
Q4000 Oil recovered (bbls)	7,919	**184,255**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	838	726	1,108	518	0	**3,190**
Barges	254	81	88	43	0	**466**
Other Vessels	1,306	428	451	260	30	**2,475**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**563**
Fixed Wing Aircraft	_	_	_	_	_	**37**
Helicopters	_	_	_	_	_	**75**
Total:	**2,398**	**1,235**	**1,647**	**818**	**30**	**6,806**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	1,859,091	407,450	594,300	438,000	**3,298,841**
Boom Staged	482,140	75,850	201,050	171,400	**930,440**
Ordered	_	_	_	_	**607,434**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	_	**3,143**
Personnel	_	**47,849**

Image not available for this document, ID: 0.7.19.2012.2

CLAIMS

www.restorethegulf.gov

Total	$157,595,515

SURFACE / SUBSEA OPERATIONS

682,158
1,071,315
669,244
275
237,950
522,170
1,586.8
184,255

BOOM (feet)

3,298,841
930,440
607,434

EQUIPMENT

					3,190
					466
					2,475
					563
					37
					75
2,398	1,235	1,647	818	30	6,806

MISCELLANEOUS

3,143
47,849

Received(Date): Fri, 09 Jul 2010 22:40:10 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 9 2010
image001.emz
oledata.mso

Topline

ξ **Skimmers Update** - BP, Edison Chouest Offshore (Chouest) and Ocean Therapy Solutions (OTS) have deployed the "Ella G," a massive platform supply vessel equipped with four centrifuge devices that will be deployed to the Gulf of Mexico for oil spill cleanup operations. The vessel provides the potential to clean up to 800,000 gallons of oily water a day.

- Additionally, 566 offshore, nearshore and shallow-water skimmers are currently in operation and 526 skimmers are on order. 515 of the new skimmers are expected to be delivered before the end of July.

ξ **Relief Wells Update** – The *Development Driller III*, drilling the first relief well, has drilled ahead to 17,780 feet and completed its ninth "ranging" run. The rig plans to perform a 10th ranging run. A video overview on the progress of the relief wells and an explanation of the bottom kill procedure is available on the BP website at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

ξ **Key claims statistics**

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $162.7 million paid
- 51,700 checks written since May 3 (9 weeks)
- 14,400 checks of $5,000 or more paid
- 120,400 calls received with a 6 second average call wait time
- 14,700 claims submitted online (as of July 5)
- 35 field offices, with translation capability at 9
- 103,000 total claims
- 1400 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 8 day average time from "claim to paid" for commercial entities who have received checks
- More than 45,000 claims are awaiting documentation
- More than 12,600 claims have "contact difficulties"

Offshore – Containment and Surface Response

New Skimming Vessel Deployed

BP, Edison Chouest Offshore (Chouest) and Ocean Therapy Solutions (OTS) introduced the "Ella G," a massive platform supply vessel equipped with four centrifuge devices that will be deployed to the Gulf of Mexico for oil spill cleanup operations. The vessel provides the potential to clean up to 800,000 gallons of oily water a day. Deployment of the Ella G brings the number of OTS centrifuge devices deployed in the Gulf to 9. BP has ordered a total of 32 OTS centrifuges and expects to deploy all 32 by the end of August, weather permitting. For more information see BP's website at:
http://www.bp.com/genericarticle.do?categoryId=9033656&contentId=7063564.

Drilling Relief Wells

Drilling continues on both wells. They are situated approximately one-half mile from the Macondo well and will attempt to intercept the existing wellbore at approximately 17,830 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,780 feet below sea level. The drilling bit is fewer than 10 feet from the Macondo well bore, and within 50 feet of its target depth. Nine ranging runs – in which a special electro-magnetic tool is run downhole - have been completed to precisely locate the MC252 casing. A tenth run is planned. Drilling began on May 2. *For a detailed explanation of this process, visit BP's website* at:
http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

ξ The second relief well (work being performed by *Development Driller II*) has drilled to 15,260 feet below sea level. The rig is drilling ahead to the next casing point at 15,959'. Drilling began on May 16.

Containment and Recovery

- Lower Marine Riser Package (LMRP) Cap – Approximately 16,308 barrels of oil have been captured through the LMRP cap during the last 24-hour period. Oil and natural gas are being carried to the surface through a riser pipe and oil is being stored on the *Discoverer Enterprise.* Captured natural gas is being flared.

- Near Term Containment: *Q4000* Direct Connect – This containment system is connected directly to the BOP and carries oil and gas through a manifold and hoses to the *Q4000* vessel. Because the *Q4000* does not have storage capacity, it uses a specialized clean-burning system to flare captured oil and gas. Approximately 8,091 barrels of oil were flared.
- Over the past 24-hour period, 55.5 million cubic feet of natural gas were flared from the *Enterprise* and the *Q4000*.
- Long Term Containment: Permanent Riser Systems – A floating riser containment system is connected to the *Helix Producer* vessel and pressure tests are being conducted. This system will be capable of collecting an additional 25,000 barrels per day from the well, and could be online within the next several days. A second system is being fabricated and installed to provide additional containment capacity, if needed.

Enhancements to Vessels of Opportunity (VOO) Program – New operational characteristics developed by the U.S. Coast Guard and BP represent existing best practices and improvements suggested by program participants. Through these modifications, the program will more effectively deploy boats to oil recovery activity and better utilize local commercial and charter fishing vessels to advance the effectiveness of the Gulf of Mexico response. The VOO program employs local commercial fishing vessels to assist in the company's response in the Gulf of Mexico and currently has more than 3,000 vessels activated for duty across four states - Louisiana, Alabama, Mississippi and Florida. Link to Press Release: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063470.

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BP Environmental Monitoring Program – As part of the response effort, several ongoing sampling and monitoring programs have been implemented. Monitoring and sampling programs are being conducted for: air quality, water quality, water column sampling, submerged oil, and worker health. Data can be found at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are

reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.

- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

State Summaries: Operations, Shoreline Impact & Claims

Filing Claims / Claims Offices – All claims data is now posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. Detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and where translators are located, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

State Specific Websites

- Alabama: www.alabamagulfresponse.com
- Florida: www.floridagulfresponse.com
- Louisiana: www.louisianagulfresponse.com
- Mississippi: www.mississippigulfresponse.com

LOUISIANA

OFFSHORE: Skimmers were moved into position and will begin operations in the morning. No burn operations.

SHORELINE: Branches are preparing resources for rapid response to likely oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre. Currently only light oiling found. Heavy oil impact is down.

INSHORE: Skimmers operated in Terrebonne, Timbalier Bay, and Barataria Bay. Other groups staged for next day operations.

WILDLIFE: 182 wildlife specialists utilized 82 boats to search for and recover oiled birds. 20 birds were collected.

AIR OPERATIONS: No dispersant dropped.

BOOM: Deployed 11,900' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Landed beach cleanup crews on Petit Bois, Horn, Cat and Ship Islands to respond to moderate to heavy tarball impact. Beach cleanup crews responded to reports of heavy tarballs from Heron Bay to Point Clear in Hancock County and heavy impact on shoreline and marsh area from Bay St. Louis to Heron Bay. Light impact was reported from Pass Christian to Long Beach, where day and night crews continued cleanup operations. Cleanup crews responded to light to moderate tarball impact from Biloxi Bay to Pascagoula Beach. Nicholson Avenue to the Silver Slipper Casino at Bayou Caddy in Bay St. Louis and Waveland closed for cleaning due to oil impact. Oil impacted Jackson Marsh at Buccaneer State Park.

NEARSHORE: Task Force conducted oil recon in protected waters around Horn Is. and Petit Bois Is. Four VOO Task Forces conducted surveillance and skimming operations. Operations were focused around barrier islands and passes. Set barge on Cat Island to enable expanded cleanup operations.

OFFSHORE: Teams pre-positioned assets in anticipation of increased oil presence from operations at the source.

BOOM: Boom gates at Biloxi and St. Louis Bays remained closed and are tended by VOO. Conducted boom damage assessment and maintenance throughout state waters. Continued boom installation at St. Louis Bay under Magnolia Plan . Deployed snare and sorbent boom in Heron, Grand and St. Louis Bays. Deployed 2,000' of boom.

ALABAMA

SHORELINE: Continued beach cleanup in re-oiled areas at Cotton Bayou between Romar and Orange Beach. Manual beach cleanup crews dispatched to Fort Morgan to respond to tarballs and oil patties. Cleanup crews responded to light oil impact at the east and west ends of Dauphin Island.

NEARSHORE: Task Force conducted oil reconnaissance in the vicinity of Mobile Bay. Investigated and skimmed in and around Ft. Morgan and Gulf Shores. Task Force conducted oil reconnaissance and skimming operations between Perdido Pass and Pensacola Bay. VOO training was conducted in Orange Beach. Shifted all tactical control of VOO to state branch control.

OFFSHORE: Team pre-positioned assets in anticipation of increased oil presence from operations at the

source

BOOM: Concentrated boom operations off Orange Beach and south of Perdido Pass, Katrina Cut and Mobile Bay. Continued to assess damaged boom in Baldwin and Mobile Counties. Continued deploying boom around the interior islands in Mobile Bay. Deployed 200' of boom.

FLORIDA

SHORELINE: Continued mechanical and manual cleanup on Escambia, Santa Rosa, Okaloosa and Walton County beaches. Focused cleaning operations in the vicinity of Pensacola Pier. Continued beach surveillance on Bay, Gulf and Franklin County beaches. No new oiling reported on state beaches.

NEARSHORE: Task Force conducted oil reconnaissance in the Panama City area. Two areas of unrecoverable sheen were found off of Laguna Beach and St. Andrews Bay. Task Force actively scouted for oil in Pensacola Bay and conducted oil reconnaissance and skimming operations between Perdido Pass and Pensacola Bay. Eight VOO Task Forces conducted surveillance, skimming and booming operations. Efforts were concentrated in the Pensacola Pass and Destin areas.

OFFSHORE: Task Forces are currently underway off the coast of Pensacola heading south.

BOOM: Deployed Tier 1 boom in Jefferson County. Completed Tier 1 boom installation in Wakulla County. Deployed Tier 2 boom in Okaloosa and Wakulla Counties. Continued boom maintenance in Walton, Bay, Gulf and Franklin Counties. Deployed 4,400' of boom.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554

MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$3,615,087
LA	$79,681,249
MS	$15,677,402
AL	$31,902,384
FL	$28,182,975
GA	$921,629
Other	$2,678,243
Total	**$162,658,969**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/8/10 6AM – 7/9/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Over $162 million in claims paid--all Claims Data now appears on BP website**
- **U.S. Coast Guard launches new website: www.restorethegulf.gov**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	26	**682,184**
Aerial & Vessel dispersants applied (gals)	0	**1,071,315**
Subsea dispersants applied (gals)	11,553	**680,797**
In-situ Burns	0	**275**
In-situ Burn (bbls burned)	0	**237,950**
LMRP CAP/Enterprise Oil Recovered (bbls)	16,308	**538,478**
LMRP CAP+Q4000 Gas flared (mmscf)	55.5	**1,642.3**
Q4000 Oil recovered (bbls)	8,091	**192,346**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	826	722	1,038	566	0	**3,152**
Barges	265	76	97	37	0	**475**
Other Vessels	1,318	392	474	257	30	**2,471**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**566**
Fixed Wing Aircraft	_	_	_	_	_	**39**
Helicopters	_	_	_	_	_	**79**
Total:	**2,398**	**1,235**	**1,647**	**818**	**30**	**6,782**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	1,877,841	409,450	594,500	442,400	**3,324,191**
Boom Staged	458,709	73,850	200,850	167,000	**900,409**
Ordered	_	_	_	_	**593,734**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	82	**3,325**
Personnel	_	**47,416**

Image not available for this document, ID: 0.7.19.2028.2

CLAIMS

www.restorethegulf.gov

Total	$162,658,969

SURFACE / SUBSEA OPERATIONS

	682,184
	1,071,315
	680,797
	275
	237,950
	538,478
	1,642.3
	192,346

EQUIPMENT

					3,152
					475
					2,471
					566
					39
					79
2,398	1,235	1,647	818	30	6,782

BOOM (feet)

3,324,191
900,409
593,734

MISCELLANEOUS

3,325
47,416

Received(Date): Sun, 11 Jul 2010 14:10:38 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Sealing Cap Installation Update

BP Press Release - July 11, 2010

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SEALING CAP INSTALLATION UPDATE

Following approval from the National Incident Commander, BP began replacing the existing lower marine riser package (LMRP) containment cap over the Deepwater Horizon's failed blow-out preventer with a new sealing cap assembly.

Installation of the sealing cap is proceeding as planned. The Discoverer Enterprise removed the LMRP cap at approximately 12:40 PM CDT on Saturday, July 10. The Discoverer Enterprise then moved off station. Following the removal of the cap, a subsea dispersant wand was inserted into the riser. Two plugs and all six flange bolts were then removed. The Discoverer Inspiration is now moving on station.

The Q4000 containment system continues to capture oil and gas from the MC252 well and flare the hydrocarbons safely at the surface. Once it becomes operational, the Helix Producer containment system will begin capturing additional oil and gas.

Technical Briefings

BP will host two technical briefings today, July 11, to provide updates on its subsea containment efforts. The briefings will be held at 7:30 AM CDT and 2:30 PM CDT. The dial-in details for these briefings are as follows:

US/Canada Dial-In Number: (877) 341-5824

International/Local Dial-In Number: (706) 758-0885

Password for morning briefings: AM Technical Briefing

Password for afternoon briefings: PM Technical Briefing

Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

Received(Date): Thu, 15 Jul 2010 13:09:01 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico from eve of July 14
image001.emz
oledata.mso

Topline

ξ **Daily Technical Briefings** – BP will continue to host two daily technical briefings to provide updates on its subsea containment efforts. The briefings will be held at 7:30 AM CDT and 2:30 PM CDT. The dial-in details for these briefings are as follows:

US/Canada Dial-In Number: (877) 341-5824
International/Local Dial-In Number: (706) 758-0885

Password for morning briefings: AM Technical Briefing
Password for afternoon briefings: PM Technical Briefing

ξ **Sealing Cap** – The three ram capping stack was successfully installed on the Lower Marine Riser Package at 7 p.m. CDT, on July 12. The stack completes the installation of the new sealing cap. In agreement with the National Incident Commander and the Unified Area Command, additional analysis has been conducted on the integrity testing procedure before proceeding to shut in the flow. Recovery up to the surface vessels, the *Q4000* and *Helix Producer* has been suspended and valves on the sealing cap will be slowly closed in sequence beginning on July 14. For more information on this containment visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063637.

ξ **Worker Health and Respirator Use** – BP has recently posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at: http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

ξ **Relief Wells Update** – Drilling on both wells has been temporarily suspended during the period of the well integrity test. This was done in agreement with the National Incident Commander, to prevent any interference with the integrity test.

ξ **Key claims statistics**

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $183 million paid
- 58,000 checks written since May 3 (10 weeks)
- 127,800 calls received
- 18,100 claims submitted online (as of July 12)
- 36 field offices, with translation capability at 9
- 110,000 total claims
- 1400 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 8 day average time from "claim to paid" for commercial entities who have received checks
- More than 42,000 claims are awaiting documentation for a first payment
- More than 13,700 claims have "contact difficulties"
  (All numbers are rounded)

Offshore Containment Response

Drilling Relief Wells

Two relief wells are being drilled approximately one-half mile from the Macondo well. They will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date. *For a detailed explanation of this process, see BP's website* at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,840 feet below sea level. The drilling bit is less than 5 feet from the Macondo well bore, and within 30 feet from the next casing point. Eleven ranging runs – in which a special electro-magnetic tool is run downhole - have been completed to precisely locate the MC252 casing. Drilling has been temporarily suspended to avoid interfering with the well integrity testing procedure.

ξ The second relief well (work being performed by *Development Driller II*) has drilled to 15,963 feet below sea level. Casing has been run and cemented. The second relief well is also on standby.

Containment and Recovery

- Long Term Containment – connection to the *Helix Producer* vessel is complete. This

system collected 9,176 barrels of oil in the past 24 hours and is capable of being ramped up to approximately 25,000 barrels per day. This system has now been shut-in as part of the well integrity testing procedure.

- Near Term Containment: the *Q4000* direct connect is also temporarily shut-in as part of the well integrity testing procedure. Approximately 7,887 barrels of oil and 19.5 million cubic feet of natural gas were flared from the *Q4000* in the past 24-hour period.

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Skimmers were operational today at the source, 8K bbls collected. 18 burn operations conducted.

SHORELINE: Branches are preparing resources for rapid response to likely oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout

Barataria Bay, South Pass and Grand Terre. Currently only light oiling found. Heavy oil impact is down.

INSHORE: 12 fishing vessel skimming Task Forces and 27 Shallow Water Barge skimming systems were operational in 5 different parishes.

WILDLIFE: 273 wildlife specialists utilized 5 flights and 83 boats to search for and recover oiled birds. 31 oiled birds were collected, 38 overall. 1 oiled sea turtle was collected.

AIR OPERATIONS: One dispersant flight, 999 gallons dispersed.

BOOM: Deployed 45,820' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Cleanup crews responded to reports of light to moderate impact on Ship, Petit Bois, Horn Islands and from Pass Christian to Long Beach. Cleanup crews responded to reports of moderate to heavy impact on Cat Island. Cleanup crews responded to light impact from Bay St. Louis to Pass Christian. Cleanup crews responded to light to moderate impact at Singing River, Belle Fontaine, Lake Mars and Point Aux Chene.

NEARSHORE: Little visible oil observed on surface waters in Mississippi Sound or south of barrier islands from VOOs or overflights. Task forces conducted oil reconnaissance and skimming operations in the vicinity of Horn Island, and conducted surveillance south of Cat Island and continued to build up

resources. Four VOO Task Forces conductedsurveillance and skimming operations throughout state waters. U.S. Navy airship flew over Mississippi coast to aid in reconnaissance and tactical direction of operations

BOOM: Continued Magnolia Project boom installation in Bay St. Louis. Mississippi Department of Environmental Quality reported that silt fencing installation has been completed for rock jetties, culverts and outfalls on Harrison County beaches including inside Biloxi Bay. Deployed approx. 8,000 ft. of hard boom.

ALABAMA

SHORELINE: Continued beach cleanups with no new oilings. Crews cleaned seaweed and existing product in Fort Morgan. Patrolled beach to identify existing oily areas and tide pools. Focused beach cleanups near dunes, fences, houses and any other areas where machines have difficulty maneuvering.

NEARSHORE: Task forces scouted areas in the vicinity of Dauphin Island, Mobile Inlet and within Mobile Bay and continued surveillance and skimming operations off of Perdido Pass. Fourteen VOO Task Forces conducted surveillance, skimming and booming operations. Light oil sheen noticed off beaches in Baldwin County.

BOOM: Replaced absorbent boom in Little Lagoon Cut. Set anchors and replaced weathered boom throughout Mobile County.

FLORIDA

SHORELINE: No new oilings reported statewide. Continued shoreline cleanup on Okaloosa Island and at Eglin AFB. Conducted manual beach cleanups in Escambia, Santa Rosa, Okaloosa, Bay, Gulf and Walton County beaches. Small number of tarballs cleaned in Walton County.

NEARSHORE: Task forces conducted oil reconnaissance in the Panama City and Destin areas with sheen encountered, but no recoverable product, and actively scouted for oil in Pensacola Bay. Fifteen VOO Task Forces conducted surveillance, skimming and booming operations. Efforts were concentrated in protected inland waters in and around Pensacola Bay.

BOOM: Continued boom inspection and maintenance in Jefferson, Wakulla, Gulf, Bay and Franklin Counties. Deployed approximately 100 feet of hard boom.

TEXAS

SHORELINE: No new contamination.

INSHORE: Recovered 6.5 cubic yards of mixed sand, emulsified oil, oiled vegetation, and debris.

OFFSHORE: Conducted 2 overflights. Reported observations to the Offshore Surface Response Vessel PERSEVERANCE.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil

sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs


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CLAIMS	
State	$ Disbursed
TX	$4,123,563
LA	$88,594,563
MS	$17,246,447
AL	$35,779,934
FL	$33,111,581
GA	$1,207,796
Other	$3,076,722
Total	**$183,140,606**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/13/10 6AM – 7/14/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Well integrity testing procedure approved by Unified Area Command.**
- **Collection of oil to surface vessels suspended during well integrity test.**
- **Relief well drilling suspended during well integrity test.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	9,998	**757,969**
Aerial & Vessel dispersants applied (gals)	999	**1,072,314**
Subsea dispersants applied (gals)	14,996	**750,134**
In-situ Burns	18	**348**
In-situ Burn (bbls burned)	0	**246,250**
Helix Producer Oil recovered (bbls)	9,176	**547,654**
Helix Producer+Q4000 Gas flared (mmscf)	29.5	**1,688.8**
Q4000 Oil recovered (bbls)	7,887	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	906	572	831	413	0	**2,722**
Barges	323	75	97	45	0	**540**
Other Vessels	1,840	414	483	263	34	**3,034**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**583**
Fixed Wing Aircraft	_	_	_	_	_	**44**
Helicopters	_	_	_	_	_	**75**
Total:	**3,069**	**1,061**	**1,411**	**721**	**34**	**6,998**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,077,282	420,950	615,700	455,300	**3,569,232**
Boom Staged	427,686	82,750	205,400	159,200	**875,036**
Ordered	_	_	_	_	**400,767**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	63	**3,589**
Personnel	_	**44,958**

Image not available for this document, ID: 0.7.19.1769.2

CLAIMS

Total	$183,140,606

SURFACE / SUBSEA OPERATIONS

757,969
1,072,314
750,134
348
246,250
547,654
1,688.8
207,524

BOOM (feet)

3,569,232
875,036
400,767

EQUIPMENT

					2,722
					540
					3,034
					583
					44
					75
3,069	1,061	1,411	721	34	6,998

MISCELLANEOUS

3,589
44,958

Received(Date): Fri, 16 Jul 2010 17:07:15 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: 7.16.2010 _ 8:00 AM DWH LEADERSHIP MEETING NOTES
To: DWH leadership <DWH.Leadership@noaa.gov>

Good evening everyone,
Apologies for the delay in getting this out.
Attached are the meeting notes from today's 8:00 am call.
Please note: The action items below will be reviewed on Monday's call. If you are listed as the POC for a tasker, please be sure to let me know if it has been completed.
Have a great weekend!
Best,
Jen

	7/11	J. Kenney		5 Key NOAA Messages	In Process
	7/11	C. Blackburn/Policy		Standard Briefing to the Commission outline	In Process
	7/12	S.Walker		NOAA science symposiums	In Process
	7/12	E. Schwaab		Finalize fisheries proposal opening this	In progress
	7/12	J. Kenney/ E. Schwaab		Samples Science Data deviation press release samples to the public	In progress
	7/12	E. Schwaab /B.Conner		Document the fact that there is little or no oil in the currently closed area	In progress
	7/12	J. Kenney/ M.Medina		Outreach to communities – Advertising opportunities and key messages	Update?
	7/12	Kennedy/Westerholm/Kenney		Day 100 : need to start tee-ing up the stories of what we are doing – due to leadership – next Friday.	In progress
	7/13	Tribble		Review contingency plan. Mark Miller will provide copy – done / being reviewed and will discuss further with Kennedy/Westerholm after full review / Ahasha will visit the NIC today (7/16) to discuss / clarify	In progress
	7/13	Murawski		Status of DO manuscript – waiting approval from OSTP. – will get / send out	In progress
	7/13	Murawski		Document how the JAG operates / distribute to the dwh.leadership group	In progress
	7/13	Kenney/Conner		Pull together a short document that would summarize the lesson	In

				learned on previous oil spills – ixtoc and Exxon Valdez - Conner, Kenney and others met yesterday and developed a 3-part plan that is responsive to this tasker. **Justin will develop a summary and discuss with Dr. Lubchenco.**	progr ess
	7/14	Jacqui Michel		Product from Jacqui Michel – leadership would like to review asap	In progr ess
	7/14	Joe Klimavicz		Post inventory of data / tools / etc. up on noaa.gov (data.gov) site by Friday AND post a link on the FOIA site indicating where the data is.	Status updat e?
	7/14	Steve/Joe (data lead)/Justin/Kenned y/Westerholm		Get group together today at 5 pm. Come back with a plan as to how we are going to move forward to speed the process up. – Completed / Next steps?	Updat e?
	7/14	Comms		Post data policy on the web	Status updat e?
	7/15/	LMR/Oliver		JO – forward notice – LA open large scale area to rec fishing late yesterday.	Comp leted
	7/15	Justin		Seafood data – work on policy. Sperm Whale tracker info – get up today.	
	7/15	Sally/Policy / NRDA		Weekly update on Mabus / long term restoration	Ongo ing
	7/16	Ahsah Tribble		Update from Ahsah on Contingency Plan	
	7/16	Science Box		Next P3 flight – likely not funded by USCG. Need to decide if we wanted to continue these flights. Meeting today at 3:00 pm. Recommendations to leadership. Will follow up after decision. Dr. Lubchenco to appeal to Admrl Allen if necessary.	
	7/16	RDML Phil Kenul		Gunter mission - consult clear way ahead - Kenul/Kennedy/Steve Murwaski – consult clear way ahead. Paul Zukunft Rear Admiral, U.S. Coast Guard. – Steve answer on consultation issue.	
	7/16	Mark Miller		Report back on long term trajectories plan. Draft for review COB today / Send draft to K. Sarri.---Also report back to International on impacts to Mexico.	
	7/16	Mark Miller		Send new trajectory to Monica- for Fisheries re-opening clarification.	
	7/16	Roy Crabtree		LA / MS / AL / FL? - checking into reopening state waters decisions.	
	7/16	Steve Murawski		Find out if we are archiving seafood samples to compare to future testing on dispersants.	
	7/16	Allison Reed		UAC set up International observers program. Allison to get more info and send out today.	

	7/13	Conner		Copies of Job Aid readily available re: Observer training – Seattle - 315 copies Mobile - 6 copies	Complete
	7/14	Schiffer		Call lawyers to DOI jurisdiction of Necropsies - pelicans	Completed
	7/14	Murawski		Check in with Ben Shorr to see if we have access to High Res maps .	Complete
	7/14	Charlie Henry		Questions/requests from Commission to dwh.staff list – received and will distribute/respond appropriately	Completed

Received(Date): Fri, 16 Jul 2010 20:31:55 -0400
From: Karen StJohn [redacted]
Subject: BP Gulf of Mexico Update for July 16, 2010
To: Karen StJohn [redacted]

Topline

Daily Technical Briefings – BP will continue to host two daily technical briefings to provide updates on its subsea containment efforts. The briefings will be held at 7:30 AM CDT and 2:30 PM CDT. The dial-in details for these briefings are as follows:

US/Canada Dial-In Number: (877) 341-5824
International/Local Dial-In Number: (706) 758-0885

Password for morning briefings: AM Technical Briefing
Password for afternoon briefings: PM Technical Briefing

Sealing Cap – The well integrity test began yesterday and as of 2:25pm the flow of oil was completely shut-in. Valves leading up to the surface vessels, the *Q4000* and *Helix Producer,* have been closed and surface recovery is suspended. The pressure will be monitored for 24-48 hours and a decision will be made in the future as to whether to resume containment operations at the surface. For more information on the containment operation visit the BP website at: http://www.bp.com/extendedsectiongenericarticle.do?categoryId=40&contentId=7061813.

Relief Wells Update – Drilling on both wells has been temporarily suspended during the period of the well integrity test. This was done in agreement with the National Incident Commander, to prevent any interference with the integrity test.

Key claims statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $201 million paid
- 64,000 checks written since May 3 (10 weeks)
- 131,000 calls received
- 18,100 claims submitted online (as of July 12)
- 36 field offices, with translation capability at 9
- 114,000 total claims
- 1500 member claims team

- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks
- More than 48,000 claims are awaiting documentation for a first payment
- More than 13,000 claims have "contact difficulties"
  (All numbers are rounded)

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Skimmers were operational today at the source, 10,784 bbls collected. 10 burn operations conducted. The oil is tracking South to Southeast of the source.

SHORELINE: Currently only light oiling found and heavy oil impact is down. Branches are deploying resources to oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre.

INSHORE: 12 fishing vessel skimming Task Forces and 27 Shallow Water Barge Skimming Systems were operational in five parishes

WILDLIFE: 280 wildlife specialists utilized 4 flights and 83 boats to search for and recover oiled wildlife.

AIR OPERATIONS: No dispersant flights.

BOOM: Deployed 43,150' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: No new oil in the vicinity of Cat Island, Ship Island, Petit Bois or Horn Island; cleanup crews continued to monitor all areas. No new oil in the vicinity of Waveland; seawalls are being cleaned as needed. No new oil in the vicinity of Pass Christian. Manual cleanup continues in Pass Christian, Long Beach, Gulf Port and Biloxi areas. Manual cleanup crews responded to reports of tarballs at two locations on Pascagoula Beach. Manual cleanup crews responded to reports of light tarballs in the vicinity of Singing River, Belle Fontaine, Lake Mars, and Point Aux Chene.

NEARSHORE: Task forces conducted oil reconnaissance and skimming operations in the vicinity of Horn Island. Twenty-one VOO Task Forces conducted surveillance and skimming operations throughout state waters.

BOOM: Significant progress on 42" boom installation for Magnolia Bay project in Bay St. Louis.

Deployed 150' hard boom in last 24 hrs.

ALABAMA

SHORELINE: Crews deployed to areas of known tarballs/staining near private residences and dunes; areas are being cleaned with owners' access permission. Crews responded to confirmed reports of tarballs in surfline at Gulf Shores and oily seaweed in tide line west of Wrecking Ball to Laguna Key. Crews worked at low tide to recover exposed tarballs at Orange Beach State Park. Crews used snare pads to capture oil on jetties and rocks at Perdido Pass. Lighter impact of oil and tarballs in Mobile County enabled teams to conduct equipment maintenance.

NEARSHORE: Task forces secured for weather; local severe thunderstorms. Vessels of Opportunity scouted 5 miles east and west of Perdido Pass and up to 10 miles offshore. VOOs secured due to weather at 14:00.

BOOM: Boom deployed at Fort Morgan was damaged. Recovery attempts will resume during low tide periods with heavy equipment. Deployed absorbent boom in Orange Beach State Park area. Boom maintenance continues in Mobile County along with the replacement of small amounts of snare, sorbent and hard boom. Deployed 600' hard boom in last 24 hrs.

FLORIDA

SHORELINE: Conducted manual beach cleanups on Escambia, Santa Rosa, Okaloosa, Bay, Gulf and Walton County beaches. New oiling reported at Eglin Air Force Base. Crews conducted manual cleanups on Perdido Beach, Perdido Key, Fort Pickens, Pensacola Beach, Navarre Beach and Okaloosa Island. Crews conducted mechanical cleanup with Beach Tech 2000 and Cherrington machines from Perdido Beach to Pensacola Beach.

NEARSHORE: Task forces conducted oil reconnaissance and boom training in Panama City. Thirteen VOO Task Forces conducted surveillance, skimming and booming

operations in state waters.

BOOM: Continued boom inspection and maintenance in Okaloosa, Walton, Jefferson, Wakulla, Bay and Franklin Counties. Deployed 9,500' hard boom in last 24 hrs.

TEXAS

SHORELINE: No new contamination. Rapid Assessment Team activities continue.

INSHORE: Recovered 8.4 cubic yards of oily solids. Total recovered to date 87.13 cubic yards of oily solids.

OFFSHORE: Conducted 2 overflights.

WILDLIFE: 1 sea turtle found deceased, no bite marks or visible oil. Total wildlife to date: 2 injured birds (live), 1 bird/3 turtles found deceased no visible oil on any wildlife.

Offshore Containment Response

Drilling Relief Wells

Two relief wells are being drilled approximately one-half mile from the Macondo well. They will attempt to intercept the existing wellbore at approximately 18,000 feet below sea level. Once intercepted, the Macondo well can be killed via a "bottom kill" by pumping heavy mud and cement into the wellbore. It is estimated the total drilling process for each well will take at least 90 days from the start date. *For a detailed explanation of this process, see BP's website* at: http://bpconcerts.com/gom/kwellsreliefwells062710.htm.

- The first relief well (work being performed by the *Development Driller III*) is at approximately 17,840 feet below sea level. The drilling bit is less than 5 feet from the Macondo well bore, and within 30 feet from the next casing point. Eleven ranging runs – in which a special electro-magnetic tool is run downhole - have been completed to precisely locate the MC252 casing. Drilling has been temporarily suspended to avoid interfering with the well integrity testing procedure.

- The second relief well (work being performed by *Development Driller II*) has drilled to 15,963 feet below sea level. Casing has been run and cemented. The second relief well is also on standby.

Containment and Recovery

- Long Term Containment – connection to the *Helix Producer* vessel is complete. This system collected 5,876 barrels of oil in the past 24 hours. This system has now been shut-in as part of the well integrity testing procedure.
- Near Term Containment: the *Q4000* direct connect is also temporarily shut-in as part of the well integrity testing procedure. Approximately 3,431 barrels of oil and 8.5 million cubic feet of natural gas were flared from the *Q4000* in the past 24-hour period.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

Worker Health and Respirator Use – BP has recently posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at: http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil

response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	

Received(Date): Mon, 19 Jul 2010 09:07:41 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: 7.19.2010 DWH 8:00 AM Leadership Briefing Notes
To: DWH leadership <DWH.Leadership@noaa.gov>
800 AM NOAA DWH LEADERSHIP AGENDA 7.19.2010_Notes.doc

Good morning everyone!

Attached are the notes from this morning's DWH Leadership Briefing.
Note the action items (listed below).

Please review and provide updates as taskers are completed if they are not noted as such.

Best,
Jen

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July 19, 2010

DEEPWATER HORIZON INCIDENT NOAA LEADERSHIP BRIEFING CALL

Time: 0800– Call in Number: B6 Privacy *– Pass Code:* B6 Privacy

MEETING PURPOSE: To update key NOAA officials on the current status of the situation and the NOAA response.
*If you are not speaking, please put your phone on mute.

DAILY UPDATES:

1. SITUATION UPDATE

- OPERATIONS:

  Pressure was 6792 psi – above previous reading. Authorizing at Houma command post – 300% above capacity. Command post will be restructuring. First relief well – will install casing (lining) tomorrow. Ranging Run -13, defines what angle they need to continue to drill. Estimates to hit well – not at this time. EPA is advertising end of July for contact with well site. Adm Nash – removing boom info request. Long Term Trajectories well received. Oil less visible at the surface. Movement is toward the Delta. Eddie Franklin is breaking up. Risk to keys is lower. Central Caribbean / Puerto Rico possible impact.

- WEATHER:

  Area – scatter showers – 40%, west of the delta and inland. Rain chance come down Tues then up on wed. Wind – e/SE – winds increase on wed. Seas up Tues 3-4 ft, wed 4-5 ft. Tropics – two areas of interest – Caribbean – expected to move toward the west 10knots, land over the next few days. More concerning – just ne of Caribbean – toward w/nw track – widely variable, possibly western Cuba / fl. Straights – 4-5 days out. Ahsha – less than 2% chance tropical storm in the next two days.

- ICC:

  Oil landfall – 615 miles. NOAA – aircraft 2.7 hours – total 623.3. P3 are discontinued – Twin otter to resume. Gunter – Pascagoula – Deepwater marine Tues, NF – deep coral wed, oregano 2 – sea food safety - sat, Pisces – seafood safety refish leg three – extended 24 hours. Clearance for acoustic tract. Bigalow – arrive 23rd – begin on Sunday. NOAA finance – 32.99 million in obligations. Personnel 127 people on travel orders.

- NIC:

  Long term modeling document. Series of fish reopening emails – commander Gleason / Lopez touch base. Murawski made presentation to NIC staff.

2. LIVING MARINE RESOURCES

- wildlife impacts
- seafood safety

working on questions from Kevin Griffis – related to the roll out. Working on proposal for closure. Should be out just after 9:00am today.

3. SCIENCE

Pisces – become major monitoring tool for breakout of methane. Made ICC comfortable with Pisces so making many passes over well head. Link back to UNH – Larry Mayor. Seismic run takes 18 hours to get a read out. Group getting the data out in real time. Looking at abortions in area around well head. Seeps around the area – potential interference with eco sounders. Requested the Pisces continue. Timing is unclear. Fleet council meeting this afternoon – and check in with Kennedy / Steve. Group: no later than tomorrow. Murawski/Kenul/Kennedy to meet and discuss.

Trying to clear the JAG report. Waiting on OSTP. Want to notify Sen. Nelson before we make this public.

**Memorial service on Pisces – Jeremy Adams did a memorial service for the people who died on the rig. Coordinated with the crew / family / BP.

4. COMMUNICATIONS

Tracking – press release for JAG report – clear today? P3 to clear. Release tomorrow. OPTF, Fish Opening. Shoreline material

5. UPDATES:

- Policy Update

Document ID: 0.7.19.1963.1

Attention is focused on the Hill – both chambers moving – 50 pieces introduced. Editorial in today's WPost – Congress intent on moving policy on DWH. Sen Commerce Committee – introduced leg – Shorr Act – addresses most of NOAA's interest. Puts our pieces on the table. Hearing this week. Doug Helton is testifying. Markup is the following day. Senate: reed – energy legislative to the forefront – oil spill leg is complicated by energy legislative. EPW –(Boxer's) – NRDA, Sen. Boxer shown support for NOAA in the past. WH meeting today – legislation that is pending in the house. House NRC – marked up Clear Act, MMS reform – create new ocean fund and aquaculture provisions – remove our authority to reg. aquaculture. House Science committee – Clear Act – addressing oil pollution into act. Debate who should lead ? – NOAA? – USCG is only give administrative only - NOAA will lead effects research. House combine oil spill – Speaker not announced exactly what she will do.

- DWH Strategic Planning
  Have all strategic plan – LMR to arrive today. Plans on SharePoint sites. Still massaging, but plans are in place. Guy Noll and Ajay will continue to work on those. Still need quad chart information. Will be meeting with Mary Glackin this week to refine further.

- Data Posting Update
  Made progress on a few fronts. Sent revised list of sites to Kennedy – Kennedy needs to approve list. Working with Data.gov to post. Plans provided Friday. Clickable to searchable index – overall plan to make it an administrable database. Incorporated data posting commitments ahead of time to data will get posted ASAP. Geoplatform.gov – info will be posted to that site as well. Needed someone in War Room as POC for Data Manager – will get with partners of science box – find out what state the data is in and how to get it online. Austin/Beard - several sets of data that were buried and in the process of getting raised.

  General Consul – 1 notice of violations / press release possible.

REMINDERS / UPCOMING EVENTS:

- Monday, 7/19/2010: NOAA/EPA meeting 10:00 AM – 11:00 AM
- Tuesday, 7/20/2010: Budget Update
- Leadership in Sarasota, FL – Science Advisory Board Meeting July20-21, 2010

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Received(Date): Tue, 20 Jul 2010 13:16:10 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 19
image001.emz
oledata.mso

Topline

Sealing Cap – The well integrity test is ongoing and active monitoring continues. The well remains shut-in with no oil flowing into the Gulf and with the pressure continuing to slowly increase. It is currently at approximately 6800 psi, which is positive. The test has been extended for a further 24 hours, contingent on continuing robust tests to check for anomalies. Seepage has been detected approximately 3 kilometers from the well, which we do not believe is associated with the Macondo, but it is being monitored. There are also anomalies on the sea floor within a few hundred meters and those are being monitored. Currently there are no indications of anomalies within the well bore, but that is being monitored closely. For more information on the containment operation or for additional technical information, visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

Relief Wells Update – Drilling resumed on the first relief well and has progressed to 17,864 feet below sea level. A 13th ranging run was completed and the *Development Driller III* is preparing to run and cement the casing. The second relief well remains on standby to avoid interfering with the precision drilling stage of the first relief well.

Key claims statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $207 million paid
- 64,600 checks written since May 3 (10 weeks)
- 131,000 calls received
- 18,100 claims submitted online (as of July 12)
- 36 field offices, with translation capability at 9
- 114,000 total claims
- 1500 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks
- More than 48,000 claims are awaiting documentation for a first payment

- More than 13,000 claims have unreachable claimants
  (All numbers are rounded)

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Skimmers are operational at the source, but no burn operations conducted. Oil tracking South/Southeast of the source.

SHORELINE: Branches are deploying resources to oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre. Currently only light oiling found. Heavy oil impact has decreased.

INSHORE: 12 fishing vessel skimming Task Forces and 27 Shallow Water Barge Skimming were operational in 5 parishes.

WILDLIFE: 278 wildlife specialists utilized 3 flights and 83 boats to search for and recover oiled birds, turtles, and mammals.

AIR OPERATIONS: No dispersant flights.

BOOM: Deployed 13,834' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Cleanup crews responded to sporadic reports of tarballs in Hancock County. Light to moderate impact reported at Pass Christian, Long Beach, Cat Island and Ship Island. Operations throughout state were curtailed due to severe thunderstorm activity.

NEARSHORE: Task forces scouted for oil and patrolled north near Horn Island, also scouted for oil and patrolled south of Cat Island. The Navy Inshore Recovery Group is now operating two shallow water skimmers in Bay St. Louis

BOOM: Magnolia Plan boom installation is now fully complete, providing significant additional protection in Bay St. Louis. Crews continued maintenance and boom repairs on Petit Bois and Horn Islands. Deployed 4,100' of boom last 24 hrs.

ALABAMA

SHORELINE: Cleanup crews continued day and night machine cleaning operations on Little Dauphin Island, West Beach, Pelican Island, East Beach, and West Point. Manual cleanup operations continued at Fort Morgan, Gulf Shores and Orange Beach. Crews responded to report of oil streamers in surf at Perdido Pass with hard boom, sorbent boom, and snare. Crews continued to remove tarballs from beach between Wrecking Ball and Laguna Key.

NEARSHORE: Task forces scouted for oil and patrolled Dauphin Island and the area of Perdido Pass.

BOOM: Boom maintenance continued in Mobile County and Grand Bay along with the replacement of small amounts of snare, sorbent and hard boom. Deployed 0' of boom last 24 hrs.

FLORIDA

SHORELINE: No new oil reported ashore in Florida. Crews conducted manual beach cleanups on Perdido Beach, Perdido Key, Fort Pickens, Pensacola Beach, Navarre Beach, Okaloosa Island and beaches throughout Escambia, Santa Rosa, Okaloosa, Bay, Gulf and Walton Counties.

NEARSHORE: Task forces performed training evolutions and scouted area around Panama City, and conducted oil reconnaissance in Pensacola Bay. VOO Task Forces conducted surveillance, skimming and booming operations in state waters.

BOOM: Continued boom inspection and maintenance in Okaloosa, Walton, Jefferson, Wakulla, Bay and Franklin Counties. Deployed 0' of boom last 24 hrs.

TEXAS

SHORELINE: No new contamination. No surveys currently scheduled.

INSHORE: Total recovered to date 117.65 cubic yards of oily solids.

OFFSHORE: Conducted 1 overflight, East of Galveston. Nothing significant to report.

WILDLIFE: 1 injured sea turtle, 2 injured birds (live), 1 bird/3 turtles found deceased no visible oil on any wildlife.

BOOM: None utilized at this time.

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Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.

- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

B6 Privacy

stjohnk@bp.com

CLAIMS	
State	$ Disbursed
TX	$4,764,370
LA	$100,126,741
MS	$19,018,495
AL	$40,493,060
FL	$37,144,083
GA	$1,481,041
Other	$3,805,373
Total	**$206,833,163**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/18/10 6AM – 7/19/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Drilling on first relief well completed to 17,864' and 13th ranging run performed.**
- **Well integrity test continued on sealing cap.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	5,122	**821,151**
Aerial & Vessel dispersants applied (gals)	0	**1,072,314**
Subsea dispersants applied (gals)	0	**771,272**
In-situ Burns	0	**409**
In-situ Burn (bbls burned)	0	**261,400**
Helix Producer Oil recovered (bbls)	0	**547,654**
Helix Producer+Q4000 Gas flared (mmscf)	0	**1,688.8**
Q4000 Oil recovered (bbls)	0	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	951	418	669	298	0	**2,336**
Barges	316	62	112	47	0	**537**
Other Vessels	1,511	425	512	289	30	**2,767**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**750**
Fixed Wing Aircraft	_	_	_	_	_	**44**
Helicopters	_	_	_	_	_	**72**
Total:	**2,778**	**905**	**1,293**	**634**	**30**	**6,506**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,243,286	452,700	616,700	481,000	**3,793,686**
Boom Staged	296,551	51,250	267,900	148,150	**763,851**
Ordered	_	_	_	_	**287,368**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	288	**4,140**
Personnel	_	**40,122**

Image not available for this document, ID: 0.7.19.1714.2

CLAIMS

Total	$206,833,163

SURFACE / SUBSEA OPERATIONS

	821,151
	1,072,314
	771,272
	409
	261,400
	547,654
	1,688.8
	207,524

BOOM (feet)

	3,793,686
	763,851
	287,368

EQUIPMENT

					2,336
					537
					2,767
					750
					44
					72
2,778	905	1,293	634	30	6,506

MISCELLANEOUS

	4,140
	40,122

Received(Date): Tue, 20 Jul 2010 09:11:58 -0700
From: "John.Cubit" <John.Cubit@noaa.gov>
Subject: [Fwd: [Coral-List] New Type of Subsurface Oil]
To: _NOS ALL DARRP STAFF <_NOS.ALL.DARRP.STAFF@NOAA.GOV>
[Coral-List] New Type of Subsurface Oil.eml

An FYI for those not already on Coral-list

--
John Cubit, Ph.D.
Regional Resource Coordinator, Southwest Region
NOAA Assessment and Restoration Division, Suite 4470
501 W. Ocean Blvd.
Long Beach, CA 90802
John.Cubit@noaa.gov
tel 562 980-4081; fax 562 980-4084
Cell phone (for urgent matters and travel contact) B7(c) personal information

Received(Date): Mon, 19 Jul 2010 23:46:50 -0500
From: Steve Kolian <[redacted]>
Subject: [Coral-List] New Type of Subsurface Oil
To: Coral List <[redacted]>

To view latest findings on subsurface oil and dispersants in the Gulf of Mexico, please go to:

http://www.ecorigs.org/EcoRigsOilSpill.html

Report:
On July 15th 2010, Scott Porter, a member of EcoRigs, observed a new type of subsurface oil and dispersant signature. It consisted of a large plume of white stringy mucus like materials. It was observed at two locations (Grand Isle (GI) 93 & GI 90) approximately occupying the area between 40 ft and 120 ft below the surface (maybe deeper). The substance varied in size from small flakes to long strings that extended up to 6 feet. (See video July 15, 2010)
There were two distinct plumes of oil and dispersants on July 15th at GI 93 and 90, there was the more common subsurface plume, the brown cloudy plume consisting of fine particulate matter located in the upper 30 ft of the water column. The last time we visited GI 93, on June 16th, we saw the same brown particulate signature except that it was confined to the upper 20 feet of the water column. The white mucus-like plume was not present during the June 16 dive and the depth of the more common brown plume did not appear to be as large. There was no surface oil or sheen on either day.
There was a third plume observed on the bottom We could not verify the depth of the plume or whether the plume on the ocean floor consisted of oil and dispersants. The soils in the area are often composed of silts deposited there by the Mississippi River or other tributaries. Sediment could have been re-suspended by active currents; the structure was near the Mississippi Canyon area. Also, the area experiences hypoxic areas during the summer months, and the plume above the seafloor could be a part of the nephloid layer that appears every year.
EcoRigs has observed similar mucus-like material in the water before; however, it was brown and different in shape and was not as persistent. At Main Pass (MP) 311, on June 6th, large globs of semi-translucent mucus like materials were present below the brown particulate type of plume (See June 6th 2010 video). On this day, the common brown oil and dispersant plume consisting of fine particulates, occupied the upper 20 feet of the water column. (See video June 6th 2010)
Finally, EcoRigs is presenting base line data of water conditions found at GI 93. Please view video captured in July 2009 and October 2008 at GI 93. The fish population observed during pre-spill visits appeared different from the current population. There was and still remains a large population of fish at GI 93 and 90 although the species composition has appears to have changed. Large populations of red snapper and amberjack were present on July 15th far more than we have seen there in the past. Video and analysis of fish and invertebrate populations are forthcoming.

Best Regards, Steve Kolian [redacted]

_____
The New Busy is not the old busy. Search, chat and e-mail from your inbox..
http://www.windowslive.com/campaign/thenewbusy?ocid=PID28326::T:WLMTAGL:ON:WL:en-US:WM_HMP:042010_3
_____
Coral-List mailing list
[redacted]
http://coral.aoml.noaa.gov/mailman/listinfo/coral-list

Received(Date): Wed, 21 Jul 2010 12:04:21 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for JULY 20
image001.emz
oledata.mso

Topline

Technical Briefing – BP will hold a single technical briefing at the same time each day. The briefings will be held at 3:00pm CDT. The dial-in details for the briefing are as follows:

US/Canada Dial-in Number: (877) 341-5824
Password for briefing: PM Technical Briefing

Sealing Cap – The well integrity test is ongoing and the well remains shut-in with no oil flowing into the Gulf. Pressure is currently at 6834 psi, and increasing approximately 1 psi per hour, which is as expected. The test has been extended for a further 24 hours, contingent on a robust testing protocol that monitors for anomalies. Seepage has been detected approximately 3 kilometers from the well, which we do not believe is associated with the Macondo, but it is being monitored. There are also anomalies on the sea floor within a few hundred meters which are also not anticipated to be associated with the Macondo well, and those are being monitored. Currently there are no indications of anomalies within the well bore. For more information on the containment operation or for additional technical information, visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

Relief Wells Update – The first relief well is at 17,864 feet below sea level. A 13th ranging run was completed and the *Development Driller III* is flushing the wellbore and preparing to run and cement the casing. The second relief well remains on standby to avoid interfering with the precision drilling stage of the first relief well.

Key claims statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $220 million paid
- 73,600 checks written since May 3 (11 weeks)
- 135,000 calls received
- 20,800 claims submitted online (as of July 12)
- 37 field offices, with translation capability at 17

- 1500 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks
- More than 52,200 claims are awaiting documentation for a first payment
- More than 11,600 claims have unreachable claimants
  (All numbers are rounded)

BP Announces Sale of Some Assets in North America and Egypt – On Tuesday, BP announced it has entered into agreements to sell some upstream assets in the United States, Canada and Egypt to Apache Corporation. The deals, together worth approximately $7 billion, comprise BP's Permian Basin assets in Texas and south-east New Mexico, US; its Western Canadian upstream gas assets; and the Western Desert business concessions and East Badr El-din exploration concession in Egypt. For more information, visit BP's website at: http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7063899.

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Skimmers operational today at the source, 2 burn operations conducted. Oil tracking S/SE of the source.

SHORELINE: Branches are allocating resources to oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre. Currently only light oiling found. Heavy oil impact has decreased.

INSHORE: 12 fishing vessel skimming Task Forces and 27 Shallow Water Barge Skimming Systems were operational in 5 parishes.

WILDLIFE: 278 wildlife specialists utilized 3 flights and 77 boats to search for and recover oiled birds, turtles, and mammals.

AIR OPERATIONS: 1 dispersant flight dispersed 200 gallons.

BOOM: Deployed 26,850' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Light impact reported throughout area of responsibility. Cleanup crews responded to light tarball impact in Hancock County and light impact on Cat and Ship

Islands. Manual cleanup continued at Lake Mars, Bell Fontaine, Point Aux Chene and Pascagoula Beach in Jackson County, and on Petit Bois and Horn Islands in Harrison

County.

NEARSHORE: Task forces scouted for oil and patrolled in the vicinity of Horn Island and completed VOSS training, and scouted for oil and patrolled south of Cat Island.

BOOM: Crews continued maintenance and boom repairs throughout Hancock, Harrison and Jackson Counties. New boom was deployed around Deer Island in Harrison County. Deployed 6,750' hard boom in last 24 hrs.

ALABAMA

SHORELINE: Cleanup crews covered more than 40 miles of shoreline, the largest effort to date in a single operational period. Manual cleanup operations continued at Fort Morgan, Gulf Shores and Orange Beach. Crews responded to a light sheen off Fort Morgan and removed tarballs from tidal pools at Orange Beach State Park. Strike teams removed tarballs beneath the Perdido Pass Bridge and crews continued to remove tarballs and oily seaweed from beach between Wrecking Ball and Laguna Key. Crews responded to report of oil streamers in surf at Little Lagoon and Laguna Key with hard boom, sorbent boom and snare. Thirteen beach cleaning machines deployed to Gulf Shores and Orange Beach for night operations.

NEARSHORE: Task forces scouted for oil and patrolled north to south near Dauphin Island, and performed maintenance and scouted in the area of Perdido Pass.

BOOM: Boom maintenance continued in Mobile and Baldwin County. Deployed 3,100' hard boom in last 24 hrs.

FLORIDA

SHORELINE: No new oil reported ashore in Florida. Crews conducted manual beach cleanups on Perdido Beach, Perdido Key, Fort Pickens, Pensacola Beach, Navarre Beach,

Okaloosa Island and beaches throughout Escambia, Santa Rosa, Okaloosa, Bay, Gulf and Walton Counties. Cleanup efforts also continued at Eglin Air Force Base.

NEARSHORE: Task forces patrolled and scouted for oil up to four miles offshore, and conducted oil reconnaissance in Pensacola Bay. VOO task forces conducted surveillance,

skimming and booming operations in state waters.

Document ID: 0.7.19.1763

BOOM: Continued boom inspection and maintenance in Okaloosa, Walton, Jefferson, Wakulla, Bay and Franklin Counties. Deployed 0' hard boom in last 24 hrs.

TEXAS

SHORELINE: One response team sent to investigate tarball report. No new contamination reported and no Shoreline Cleanup Assessment Teams currently scheduled for deployment.

INSHORE: Total recovered 117.65 cubic yards of oily solids.

OFFSHORE: 2 overflights conducted, 1st overflight west of Galveston. 2nd overflight south of Galveston. Nothing significant to report.

WILDLIFE: Total wildlife to date: 1 injured sea turtle, 2 injured birds (live), 1 bird/3 turtles found deceased no visible oil on any wildlife.

BOOM: None utilized at this time.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

Worker Health and Respirator Use – BP has recently posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at: http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858

Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

B6 Privacy (cell)

stjohnk@bp.com

CLAIMS	
State	$ Disbursed
TX	$5,209,065
LA	$106,273,342
MS	$19,939,267
AL	$43,305,907
FL	$39,741,566
GA	$1,609,504
Other	$4,222,838
Total	**$220,301,489**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/19/10 6AM – 7/20/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Well remains shut in and Integrity Test continues.**
- **Preparing to run and cement casing on first relief well**
- **$220 million paid out in claims**
- **BP announces agreements to sell $7 billion in assets**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	3,113	**824,264**
Aerial & Vessel dispersants applied (gals)	200	**1,072,514**
Subsea dispersants applied (gals)	0	**771,272**
In-situ Burns	2	**411**
In-situ Burn (bbls burned)	TBD	**265,350**
Helix Producer Oil recovered (bbls)	0	**547,654**
Helix Producer+Q4000 Gas flared (mmscf)	0	**1,688.8**
Q4000 Oil recovered (bbls)	0	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	951	461	625	334	0	**2,371**
Barges	323	61	109	47	0	**540**
Other Vessels	415	417	512	288	30	**1,662**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**750**
Fixed Wing Aircraft	_	_	_	_	_	**45**
Helicopters	_	_	_	_	_	**75**
Total:	**1,689**	**939**	**1,246**	**669**	**30**	**5,443**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,269,236	459,450	619,800	481,000	**3,829,486**
Boom Staged	274,830	95,800	296,400	148,150	**815,180**
Ordered	_	_	_	_	**265,468**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	127	**4,267**
Personnel	_	**42,478**

Image not available for this document, ID: 0.7.19.1763.2

CLAIMS

Total	$220,301,489

SURFACE / SUBSEA OPERATIONS

	824,264
	1,072,514
	771,272
	411
	265,350
	547,654
	1,688.8
	207,524

BOOM (feet)

	3,829,486
	815,180
	265,468

EQUIPMENT

					2,371
					540
					1,662
					750
					45
					75
1,689	939	1,246	669	30	5,443

MISCELLANEOUS

	4,267
	42,478

Received(Date): Thu, 22 Jul 2010 17:56:20 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 21
image001.emz
oledata.mso

Topline

Technical Briefings – BP will attempt to hold a technical briefing each day at 3:00pm CDT. The dial-in details for the briefing are as follows:

US/Canada Dial-in Number: (877) 341-5824
Password for briefing: PM Technical Briefing

Sealing Cap – The well integrity test is ongoing and monitoring of the seafloor and wellhead continues. The test has been extended for an additional 24-hour period, contingent on a robust test protocol to check for anomalies. The well remains shut-in with no oil flowing into the Gulf. Pressure continues to slowly increase at a rate of approximately 1 pound per square inch (psi) per hour and is currently at 6850 psi, which is positive. BP is currently working with the National Incident Command on different scenarios for containment in the event of a weather event that requires surface vessels to move offsite. Contingency planning anticipates that a weather event could create a 10-14 day gap in drilling operations. For more information on the containment operation or for additional technical information, visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

Relief Wells Update – The first relief well is at 17,864 feet below sea level. The *Development Driller III* is preparing to run and cement casing, but is analyzing the weather scenarios with the National Incident Command before proceeding. The second relief well remains on standby at 15,963 feet, to avoid interfering with the operations on the first relief well.

Static Kill – BP is analyzing its options to proceed with a "static kill." With the flow in the well contained, a static kill operation would attempt to deliver heavy mud through the top of the well. This differs from the prior-attempted top kill in that the flow itself is no longer a hindrance to successful injection of mud. If approved by the National Incident Command, this operation would be sequenced after installation of the last string of casing in the first relief well. This would be necessary to protect the integrity of the wellbore in the relief well, which is currently only 4 feet from the Macondo well. More information about this operation will be posted on BP 's website in the near future.

Key claims statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $226 million paid
- 75,400 checks written since May 3 (10 weeks)
- 136,700 calls received
- 22,600 claims submitted in the last two weeks
- 18,100 claims submitted online (as of July 18)
- 37 field offices, with translation capability at 9
- 1500 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks
- More than 52,800 claims are awaiting documentation for a first payment
- More than 11,600 claims have unreachable claimants
  (All numbers are rounded)

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Large Skimmers operational today at the source. Sea conditions forced smaller skimmers to move into harbor.

SHORELINE: Currently only light oiling found. Branches are allocating resources to oiling in several locations from St. Bernard Parish to Grand Isle. Continued ops throughout Barataria Bay, South Pass and Grand Terre.

INSHORE: 12 fishing vessel skimming Task Forces and 27 Shallow Water Barge Skimming Systems were operational in 5 parishes.

WILDLIFE: 276 wildlife specialists utilized 4 flights and 84 boats to search for and recover oiled birds, turtles, and mammals.

AIR OPERATIONS: No dispersant flights.

BOOM: Deployed 19,750' hard boom in last 24 hrs.

MISSISSIPPI

SHORELINE: Light impact reported. Cleanup crews responded to light tarball impact in Waveland, Pass Christian, Long Beach, Gulf Port,

Biloxi, Cat and Ship Islands. Manual cleanup continued at Bell Fontaine, Singing River Island, Round Island, Petis Bois and Horn Islands and in Pascagoula.

NEARSHORE: Task forces scouted for oil and patrolled in the vicinity of Pascagoula, and scouted for oil and patrolled south of Cat Island.

BOOM: Crews continued maintenance and boom repairs throughout Hancock, Harrison and Jackson Counties. Sorbent and snare boom was deployed in Harrison and Hancock Counties to protect marsh areas. Deployed 10,000' hard boom in last 24 hrs.

ALABAMA

SHORELINE: Heavy to moderate oiling confirmed at West Point and on Little Dauphin Island. Manual cleanup operations continued at Fort Morgan, Gulf Shores and Orange Beach. Crews responded to a light sheen off Fort Morgan and removed tarballs from tidal pools at Orange Beach State Park. Strike teams removed tarballs beneath the Perdido Pass Bridge and crews continued to remove tarballs and oily seaweed from beach along Perdido Pass. Crews responded to report of oil streamers in surf at Little Lagoon and Laguna Key with hard boom, sorbent boom and snare.

NEARSHORE: Task forces working with Navy airship at Fort Morgan to conduct skimming, training and coordination; prepared to execute severe weather plan.

OFFSHORE: Due to current weather conditions, small vessels, barges and VOOs have been instructed to recover equipment, and seek safe harbor.

BOOM: Boom maintenance continued in Mobile and Baldwin County. Oily snare removed from surf at Little Lagoon. Deployed 1,100' hard boom in last 24 hrs.

FLORIDA

SHORELINE: No new oil reported ashore in Florida. Crews conducted manual beach cleanups on Perdido Beach, Perdido Key, Fort Pickens, Pensacola Beach, Navarre Beach,

Okaloosa Island and beaches throughout Escambia, Santa Rosa, Okaloosa, Bay, Gulf and Walton Counties. Cleanup efforts also continued at Eglin Air Force Base.

NEARSHORE: Task forces patrolled and scouted for oil up to four miles offshore; prepared to execute

severe weather plan; and conducted training with Marco Skimmer. Prepared to execute severe weather plan. Task forces also patrolled and scouted in the area of NAS Pensacola west pier.

OFFSHORE: Due to current weather conditions, small vessels, barges and VOOs have been instructed to recover equipment, enter decon and seek safe harbor.

BOOM: Continued boom inspection and maintenance in Okaloosa, Walton, Escambia, Jefferson, Wakulla, Bay and Franklin Counties. Deployed 0' hard boom in last 24 hrs.

TEXAS

SHORELINE: No new contamination.

INSHORE: Total recovered 117.65 cubic yards of oily solids.

NEARSHORE: Nothing significant to report.

OFFSHORE: 1 over flight conducted at 0900. Nothing significant to report.

BOOM: None utilized at this time.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

Worker Health and Respirator Use – BP has recently posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at: http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly

asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	

Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

B6 Privacy (cell)

B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$5,410,945
LA	$108,579,001
MS	$20,377,993
AL	$44,360,877
FL	$41,273,901
GA	$1,719,212
Other	$4,562,153
Total	**$226,284,082**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/20/10 6AM – 7/21/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Well integrity test to continue for another 24 hours**
- **Weather contingency planning underway with National Incident Command**
- **$226 million paid in claims**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	930	**825,194**
Aerial & Vessel dispersants applied (gals)	0	**1,072,514**
Subsea dispersants applied (gals)	0	**771,272**
In-situ Burns	0	**411**
In-situ Burn (bbls burned)	100	**265,450**
Helix Producer Oil recovered (bbls)	0	**547,654**
Helix Producer+Q4000 Gas flared (mmscf)	0	**1,688.8**
Q4000 Oil recovered (bbls)	0	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	951	398	619	343	0	**2,311**
Barges	326	61	112	47	0	**546**
Other Vessels	507	424	512	284	30	**1,757**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**752**
Fixed Wing Aircraft	_	_	_	_	_	**43**
Helicopters	_	_	_	_	_	**76**
Total:	**1,784**	**883**	**1,243**	**674**	**30**	**5,485**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,298,086	469,450	620,900	481,000	**3,869,436**
Boom Staged	269,237	85,800	295,300	148,150	**798,487**
Ordered	_	_	_	_	**235,768**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	112	**4,379**
Personnel	_	**41,643**

Image not available for this document, ID: 0.7.19.1793.2

CLAIMS

Total	$226,284,082

SURFACE / SUBSEA OPERATIONS

	825,194
	1,072,514
	771,272
	411
	265,450
	547,654
	1,688.8
	207,524

BOOM (feet)

	3,869,436
	798,487
	235,768

EQUIPMENT

					2,311
					546
					1,757
					752
					43
					76
1,784	883	1,243	674	30	5,485

MISCELLANEOUS

	4,379
	41,643

Received(Date): Wed, 28 Jul 2010 01:47:50 -0400
From: Karen StJohn [redacted]
Subject: BP Gulf of Mexico Update July 27 2010
To: Karen StJohn <karenstjohnusa@gmail.com>
image001.emz
oledata.mso

Topline

TechnicalBriefings – BP will attempt to hold a technical briefing each day at 3:00pm CDT. The dial-in details for the briefing are as follows:

US/Canada Dial-in Number: (877) 341-5824
Password for briefing: PM Technical Briefing

Sealing Cap – The MC252 well has been successfully shut-in for integrity testing since July 15. BP continues to closely monitor the MC252 well and well-capping structure, under the guidance of the Unified Command. There have been no anomalies in the seismic and acoustic testing that would indicate a lack of well integrity. Pressure continues to slowly rise and is at approximately 6,932 psi. For more information on the containment operation or for additional technical information, visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

Relief Wells Update – The *Development Driller III,* drilling the first relief well, is on site and proceeding to cement the casing in the first relief well. This is expected to be completed over the weekend. After that, the DDIII will continue drilling towards the Macondo well. The *Development Driller II*, has returned to the site, is reconnected to the 2nd relief well and will remain on standby.

Static Kill – BP is undertaking preparations for a "static kill" operation, under the guidance and approval of the Unified Command. Surface vessels are onsite and deploying the necessary subsurface equipment to proceed. With the flow in the well contained, a static kill operation would attempt to deliver heavy mud through the top of the well. This differs from the prior-attempted top kill in that the flow itself is no longer a hindrance to successful injection of mud. This operation would be sequenced after the casing is cemented in the first relief well, which is necessary to protect the integrity of the wellbore in that well. For a video explanation of the static kill procedure and how it relates to the relief well effort, please visit the BP website at: http://bp.concerts.com/gom/kentwellstechupdate_072110a.htm.

Claims Update

On June 16, BP reached an agreement with the White House to establish a $20 billion escrow fund and to create the Gulf Coast Claims Facility (GCCF), headed by Kenneth Feinberg, to administer the fund. BP and the GCCF have agreed that the transition of the BP Claims process to GCCF will occur in August. A specific date is not yet set. BP will continue to receive and process claims for payment during August until the transition is completed. The GCCF will notify communities, governments and media of any changes in processes and procedures before the actual transition date. BP's community relations staff and website will direct the public to the proper website and materials when the transition occurs**.**

Key Claims Statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $251 million paid
- 82,600 checks written since May 3
- 144,000 calls received
- 22,800 claims submitted in the past two weeks
- 18,100 claims submitted online (as of July 18)
- 37 field offices, with translation capability at 9
- 1600 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks
- 56,200 claims are awaiting documentation for a first payment
- 11,900 claims have unreachable claimants
  (All numbers are rounded)

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Currently only light oiling found.

SHORELINE: Currently only light oiling found.

INSHORE: Currently only light oiling found. Fishing vessel skimming Task Forces and Shallow Water Barge Skimming Systems were operational.

WILDLIFE: 245 wildlife specialists utilized 3 flights and 64 boats to search for and recover oiled birds,

turtles, and mammals.

AIR OPERATIONS: 16 overflights; 0 dispersants

BOOM: Deployed 2,200', and recovered 1,600' hard boom in last 24 hrs, for a net deployment of 600'.

MISSISSIPPI

SHORELINE: Crews conducted manual beach cleanup on Petit Bois and Ship Islands and on beaches in Harrison and Hancock Counties. Cleanup crews surveyed impacts on barrier islands. Crews continue to re-establish work sites and staging areas.

NEARSHORE: Vessels of Opportunity conducted boom monitoring, surveillance and tarball collection. Task Forces responded to several reports of oiling, but found no recoverable product.

BOOM: Crews continued boom maintenance in Jackson, Harrison, and Hancock counties. Repair crews were dispatched to investigate several reports of broken boom reported by aerial observers.

ALABAMA

SHORELINE: Cleanup crews responded to moderate to heavy tarball impact on the west end of Dauphin Island. Crews continue to re-establish work sites and staging areas

throughout all divisions.

NEARSHORE: Vessels of Opportunity conducted boom monitoring, surveillance and tarball collection.

BOOM: Crews continued boom maintenance in all divisions. Boom removed in anticipation of last weekend's heavy weather will not be immediately replaced in Baldwin County.

FLORIDA

SHORELINE: Crews report minimal impact in Gulf and Franklin Counties; manual beach cleanup continued. Crews continue to re-establish work sites and staging areas

throughout all divisions.

NEARSHORE: Vessels of Opportunity employed for surveillance, boom monitoring and tarball collection.

BOOM: Crews continued boom maintenance; re-deployment of boom and re-establishment of Vessels of Opportunity operations and beach cleanup underway in all divisions.

TEXAS

SHORELINE: No shoreline surveys currently scheduled.

INSHORE: Total recovered 117.65 cubic yards of oily solids.

NEARSHORE: Nothing significant to report.

OFFSHORE: Over-flight conducted at 9am, Aircraft 1 to Galveston: Nothing significant to report; Aircraft 2 to Bolivar: Nothing significant to report.

WILDLIFE: Total wildlife to date: 1 injured sea turtle, 2 injured birds (live), 1 bird/3 turtles found deceased no visible oil on any wildlife.

BOOM: None utilized at this time.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

Worker Health and Respirator Use – BP has recently posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at: http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511
Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123

Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	

CLAIMS	
State	$ Disbursed
TX	$6,421,862
LA	$116,298,667
MS	$21,863,475
AL	$51,788,266
FL	$46,819,016
GA	$2,163,247
Other	$5,579,522
Total	$250,934,055

Gulf of Mexico I
- Daily Dashbo
Period: 7/26/10 6AM – 7
Produced BP's Washingto
Sources: BP and National Inci

Topline:
- Ongoing testing o integrity.
- Surface vessels p
- Relief well ships o with drilling opera

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	1	825,368
Aerial & Vessel dispersants applied (gals)	0	1,072,514
Subsea dispersants applied (gals)	0	771,272
In-situ Burns	0	411
In-situ Burn (bbls burned)	0	265,450
Helix Producer Oil recovered (bbls)	0	547,654
Helix Producer+Q4000 Gas flared (mmscf)	0	1,688.8
Q4000 Oil recovered (bbls)	0	207,524

	LA	MS
Vessel of Opportunity	928	20
Barges	248	2
Other Vessels	563	28
Skimmers(Off-Near shore, Shallow Water)	_	_
Fixed Wing Aircraft	_	_
Helicopters	_	_
Total:	1,729	52

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,312,056	470,050	604,575	392,400	3,415,530
Boom Staged	258,593	146,600	291,800	148,150	845,143
Ordered	_	_	_	_	176,568

MIS	
Wildlife Impacts	
Personnel	

Document ID: 0.7.19.1888

CLAIMS	
State	$ Disbursed
TX	$6,421,862
LA	$116,298,667
MS	$21,863,475
AL	$51,788,266
FL	$46,819,016
GA	$2,163,247
Other	$5,579,522
Total	**$250,934,055**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/26/10 6AM – 7/27/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Ongoing testing of sealing cap continues to show well integrity.**
- **Surface vessels preparing for static kill operation.**
- **Relief well ships onsite and preparing to continue with drilling operations.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	1	**825,368**
Aerial & Vessel dispersants applied (gals)	0	**1,072,514**
Subsea dispersants applied (gals)	0	**771,272**
In-situ Burns	0	**411**
In-situ Burn (bbls burned)	0	**265,450**
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Helix Producer+Q4000 Gas flared (mmscf)	0	**1,688.8**
Q4000 Oil recovered (bbls)	0	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	928	207	186	155	0	**1,466**
Barges	248	29	145	40	0	**462**
Other Vessels	563	289	394	258	36	**1,540**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**811**
Fixed Wing Aircraft	_	_	_	_	_	**38**
Helicopters	_	_	_	_	_	**66**
Total:	**1,729**	**525**	**725**	**453**	**36**	**3,983**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,312,056	470,050	604,575	392,400	**3,415,530**
Boom Staged	258,593	146,600	291,800	148,150	**845,143**
Ordered	_	_	_	_	**176,568**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	4	**5,175**
Personnel	_	**24,842**

Image not available for this document, ID: 0.7.19.1888.2

CLAIMS	
State	$ Disbursed
TX	$6,421,862
LA	$116,298,667
MS	$21,863,475
AL	$51,788,266
FL	$46,819,016
GA	$2,163,247
Other	$5,579,522
Total	$250,934,055

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/26/10 6AM – 7/27/10 6AM

Produced BP's Washington, DC Office

Sources: BP and National Incident Command

Topline:

- **Ongoing testing of sealing cap continues to show well integrity.**
- **Surface vessels preparing for static kill operation.**
- **Relief well ships onsite and preparing to continue with drilling operations.**

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Oily water mixture recovered via skimming (bbls)	1	825,368
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In-situ Burns	0	411
In-situ Burn (bbls burned)	0	265,450
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Barges	248	29	145	40	0	462
Other Vessels	563	289	394	258	36	1,540
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	811
Fixed Wing Aircraft	_	_	_	_	_	38
Helicopters	_	_	_	_	_	66
Total:	1,729	525	725	453	36	3,983

BOOM (feet)					
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Boom Deployed or Assigned	2,312,056	470,050	604,575	392,400	3,415,530
Boom Staged	258,593	146,600	291,800	148,150	845,143
Ordered	_	_	_	_	176,568

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	4	5,175
Personnel	_	24,842

Document ID: 0.7.19.1888.3

Received(Date): Thu, 29 Jul 2010 12:34:08 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: BP Gulf of Mexico Update for July 28 2010
image001.emz
image002.gif
oledata.mso

Topline

Technical Briefings – BP will attempt to hold a technical briefing each day at 3:00pm CDT. The dial-in details for the briefing are as follows:

US/Canada Dial-in Number [redacted]
[redacted]

Sealing Cap – The MC252 well has been successfully shut-in for integrity testing since July 15. Continuous seismic monitoring has shown no anomalies that would indicate a lack of well integrity. Pressure continues to slowly rise and is at approximately 6,940 psi. For more information on the containment operation or for additional technical information, visit the BP website at: http://www.bp.com/genericarticle.do?categoryId=9033572&contentId=7063039.

Relief Wells Update – The *Development Driller III,* drilling the first relief well, is on site and proceeding to cement the casing in the first relief well. This is expected to be completed over the weekend. After that, the DDIII will continue drilling towards the Macondo well. The *Development Driller II*, has returned to the site, is reconnected to the 2nd relief well and will remain on standby.

Static Kill – BP is proceeding with a "static kill" operation, under the guidance and approval of the Unified Command. Surface vessels are onsite and deploying the necessary subsurface equipment to proceed. With the flow in the well contained, a static kill operation would attempt to deliver heavy mud through the top of the well. This differs from the prior-attempted top kill in that the flow itself is no longer a hindrance to successful injection of mud. This operation would be sequenced after the casing is cemented in the first relief well, which is necessary to protect the integrity of the wellbore in that well. For a video explanation of the static kill procedure and how it relates to the relief well effort, please visit the BP website at: http://bp.concerts.com/gom/kentwellstechupdate_072110a.htm.

Claims Update – August advance payments to be paid this week

BP will make at least $60 million in advance payments for August, by the end of this week. The payments will go to claimants across the Gulf Coast who have lost income or net profit due to the oil spill in the Gulf of Mexico. The advance payment program is designed to ensure people can meet their financial obligations, such as home and boat loans for the month. BP wants to be sure claimants understand that the transition of claims over to the Gulf Coast Claims Facility (GCCF), to be headed by Kenneth Feinberg, will not affect their August advance payments. BP and the GCCF have agreed that the transition will occur in August, but a specific date is not yet set. BP will continue to receive and process claims for payment during August until the transition is completed. The GCCF will notify communities, governments and media of any changes in processes and procedures before the actual transition date. BP's community relations staff and website will direct the public to the proper website and materials when the transition occurs**.**

Key Claims Statistics

Full report at:
http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267.

- $256 Million Paid to date
- 83,800 checks written since May 3
- 146,000 calls received
- 22,600 claims submitted in the past two weeks
- 18,100 claims submitted online (as of July 18)
- 37 field offices, with translation capability at 9
- 1600 member claims team
- 5 day average time from "claim to paid" for individuals who have received checks
- 9 day average time from "claim to paid" for commercial entities who have received checks

- 56,500 claims are awaiting documentation for a first payment
- 11,900 claims have unreachable claimants
  (All numbers are rounded)

State Summaries – Shoreline Operations

LOUISIANA

OFFSHORE: Currently only light oiling found.

SHORELINE: Currently only light oiling found.

INSHORE: Currently only light oiling found. Fishing vessel skimming Task Forces and Shallow Water Barge Skimming Systems were operational.

WILDLIFE: 255 wildlife specialists utilized 3 flights and 84 boats to search for and recover oiled birds, turtles, and mammals.

AIR OPERATIONS: 64 flights; 0 dispersants

BOOM: Deployed 86,000' of hard boom; recovered 17,100' of hard boom; a net deployment 68,900' of boom in the last 36 hrs.

MISSISSIPPI

SHORELINE: Cleanup crews responded to reports of light to moderate tarballs along beaches and barrier islands. Cleanup crews will begin manual cleaning at night due to

tidal shifts in Hancock County.

NEARSHORE: Vessels of Opportunity conducted boom monitoring, surveillance and tarball collection.

BOOM: Crews continued boom maintenance in Jackson, Harrison, and Hancock Counties. Hard boom in Harrison County has been redeployed.

ALABAMA

SHORELINE: Cleanup crews responded to moderate tarball impact on the west end of Dauphin Island. Crews reported seaweed contaminated with tarballs in Baldwin County. Nine beach cleaning machines conducted night operations in Baldwin County.

NEARSHORE: Twenty eight Vessels of Opportunity operating off Dauphin Island.

OFFSHORE: Task forces conducted skimming operations 12 nautical miles south of Dauphin Island.

BOOM: Crews continued boom maintenance and minor repairs in all divisions. Perdido Pass boom removed and stored.

FLORIDA

SHORELINE: Cleanup crews continue manual cleanup in Escambia, Santa Rosa, Okaloosa, Walton and Bay Counties. Night beach cleanup operations have been suspended due to low oiling impact in Bay County.

NEARSHORE: Task forces performed preventative maintenance, and scouted for oil.

BOOM: Crews continued boom maintenance throughout the state. Boom located in Mashes Sands and St. Marks reported to be out of the water due to recent low tides.

Recovered 2,800' of boom in the last 24 hrs.

TEXAS

SHORELINE: Teams performed an assessment west of San Luis Pass, Stewart Beach and Bolivar; they recovered less than 3 gallons (.014 cubic yards).

NEARSHORE: Nothing significant to report.

OFFSHORE: Nothing significant to report.

WILDLIFE: Total wildlife to date: 1 injured sea turtle, 2 injured birds (live), 1 bird/3 turtles found deceased no visible oil on any wildlife.

BOOM: None utilized at this time.

Contact Information and Other Resources

Filing Claims / Claims Offices – All claims data is posted on BP's website at: http://www.bp.com//sectiongenericarticle.do?categoryId=9034294&contentId=7063267. The contact number for claims is (800) 440-0858. Claims can also be filed online at: www.bp.com/claims. For detailed information about filing claims, including office location, information about government claims, business claims, documentation requirements and translators, visit BP's web site at: http://www.bp.com/sectiongenericarticle.do?categoryId=9033791&contentId=7062345.

Worker Health and Respirator Use – BP has posted the results through the end of June for the personal exposure monitoring program. This summary includes an explanation of the program and the results of the tests. To view the report, visit the BP website at: http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/health_monitoring_summary_report_july.pdf. You can also access the U.S. Department of Labor's guidance on protecting worker health at:

http://www.osha.gov/oilspills/interim-guidance-qa.html. This guidance answers commonly asked questions about *heat stress*, *use of respirators*, and *chemical exposure*.

BP Environmental Monitoring Program – As part of the response effort, several ongoing environmental sampling and monitoring programs have been implemented. The data is posted on BP's website at:
http://www.bp.com/sectiongenericarticle.do?categoryId=9033821&contentId=7062498#

Interactive Mapping Websites – BP has developed an Interactive Mapping Tool meant to provide a one-stop shop for detailed near-real-time information about the response to the Deepwater Horizon BP oil spill.

- The BP mapping tool is located at: http://www.gulfofmexicoresponsemap.com.
- The U.S. Government mapping tool that is located at: www.GeoPlatform.gov/gulfresponse.

Spill Response Technology and Offers of Services or Products

- To submit alternative response technology, or offer services or products, call (281) 366-5511, or go online at: www.horizonedocs.com. After forms are received they are reviewed by a team of technical and operational personnel who assess need, technical feasibility and application.
- The U.S. Government issued a general call for submission of white papers that cover: oil sensing improvements to response and detection; oil wellhead control and submerged oil response; traditional oil spill response technologies; alternative oil spill response technologies; and oil spill damage assessment and restoration. That information can be found at: https://www.fbo.gov/spg/DHS/USCG/USCGRDC/HSCG32-10-R-R00019/listing.html.

Contact Information	
Environment / Community Hotline – to report oil on the beach or shoreline or other environment or community impacts and access the Rapid Response Team	(866) 448-5816
Wildlife – to report and access care for impacted, i.e. oil wildlife	(866) 557-1401
Volunteers – to request volunteer information	(866) 448-5816
Vessels of Opportunity – to report and register boats available to assist with response	(866) 279-7983 or (877) 847-7470
Training – for questions about training requirements, times and locations, and to sign up	(866) 647-2338
Services – to register as consultant, contractor, vendor, or submit information on alternative response technology, services, products or suggestions	(281) 366-5511

Ideas or Services to Offer – File online at www.horizonedocs.com	
Investor Relations	(281) 366-3123
Claims – by phone	(800) 440-0858
Claims – File online at www.bp.com/claims	
U.S. Government Joint Information Center	(713) 323-1670
Transocean Hotline	(832) 587-8554
MI Swaco Hotline	(888) 318-6765
Twitter: Oil_Spill_2010	
Facebook: Deepwater Horizon Response	
Joint Incident Command website: www.restorethegulf.gov	



Karen St John

BP America

Sr. Director, Regulatory Affairs

(202) 457-6594

B5 Internal Deliberative (cell)

B6 Privacy

CLAIMS	
State	$ Disbursed
TX	$6,607,345
LA	$117,525,292
MS	$22,140,882
AL	$53,349,506
FL	$47,811,230
GA	$2,322,632
Other	$5,856,200
Total	**$255,613,087**

Gulf of Mexico Incident - Daily Dashboard -

Period: 7/27/10 6AM – 7/28/10 6AM

Produced BP's Washington , DC Office

Sources: BP and National Incident Command

Topline:

- **Well remains shut in and well integrity testing continues with no anomalies.**
- **Work proceeding on relief wells.**
- **BP announces advance August claims payments.**

SURFACE / SUBSEA OPERATIONS		
Activity	Prior 24hrs	Total
Oily water mixture recovered via skimming (bbls)	155	**825,523**
Aerial & Vessel dispersants applied (gals)	0	**1,072,514**
Subsea dispersants applied (gals)	0	**771,272**
In-situ Burns	0	**411**
In-situ Burn (bbls burned)	0	**265,450**
Helix Producer Oil recovered (bbls)	0	**547,654**
Helix Producer+Q4000 Gas flared (mmscf)	0	**1,688.8**
Q4000 Oil recovered (bbls)	0	**207,524**

EQUIPMENT						
	LA	MS	AL	FL	Drill Site	Total
Vessel of Opportunity	918	246	237	166	0	**1,567**
Barges	248	29	150	40	0	**467**
Other Vessels	563	290	395	259	36	**1,543**
Skimmers(Off-Near shore, Shallow Water)	_	_	_	_	_	**811**
Fixed Wing Aircraft	_	_	_	_	_	**38**
Helicopters	_	_	_	_	_	**63**
Total:	**1,729**	**565**	**785**	**465**	**36**	**4,489**

BOOM (feet)					
	LA	MS	AL	FL	Total
Boom Deployed or Assigned	2,376,756	470,050	604,575	389,600	**3,840,981**
Boom Staged	318,849	146,600	291,800	148,150	**905,399**
Ordered	_	_	_	_	**152,800**

MISCELLANEOUS		
	Prior 24hrs	Total
Wildlife Impacts	41	**5,216**
Personnel	_	**29,203**

CLAIMS

Total	$255,613,087

SURFACE / SUBSEA OPERATIONS

	825,523
	1,072,514
	771,272
	411
	265,450
	547,654
	1,688.8
	207,524

BOOM (feet)

	3,840,981
	905,399
	152,800

EQUIPMENT

					1,567
					467
					1,543
					811
					38
					63
1,729	565	785	465	36	4,489

MISCELLANEOUS

	5,216
	29,203

Image not available for this document, ID: 0.7.19.1752.3

Received(Date): Wed, 04 Aug 2010 09:07:35 -0400
From: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Subject: dispersant question
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Steven Wilson <Steven.Wilson@noaa.gov>

War Room-- Can someone provide Steve Wilson and me with an answer to this question about dispersant use? Thank you.
Lauren

-------- Original Message --------

Subject: Re: This afternoon
Date: Wed, 04 Aug 2010 08:58:44 -0400
From: Steven Wilson <Steven.Wilson@noaa.gov>
To: 'Steven.Wilson@noaa.gov' <Steven.Wilson@noaa.gov>, 'Lauren.B.Lugo@noaa.gov' <Lauren.B.Lugo@noaa.gov>

Lauren

Can you find out when dispersant was last used and where? This information will be helpful.

My thought was it was last used at least two weeks ago.

Steven

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
(301)713-2355 x145
fax: (301)713-1081

Received(Date): Wed, 04 Aug 2010 15:06:14 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: [Fwd: Westerholm press]
To: Dave Westerholm <Dave.Westerholm@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Carol Kavanagh <Carol.Kavanagh@noaa.gov>
Westerholm press.eml

FYI - stellar pic - great job Dave!

Received(Date): Wed, 04 Aug 2010 14:59:27 -0400
From: Chris Vaccaro <Christopher.Vaccaro@noaa.gov>
Subject: Westerholm press
To: Jen Pizza <Jen.Pizza@noaa.gov>

FYI. Nothing worrisome here:

Washington Independent:
http://washingtonindependent.com/93666/administration-defends-use-of-dispersants-after-oil-spill

AP Photo of Westerholm:
http://www.google.com/hostednews/ap/slideshow/ALeqM5hSsGsiZ18JYxHwuLGeC7Tu4T2nLwD9HCQH800?index=0

Received(Date): Sun, 08 Aug 2010 06:32:17 -0400
From: Christopher.S.Moore@noaa.gov
Subject: Morning reports
To: Deepwater.HorizonDist@noaa.gov
Deepwater_Horizon_Report_104.pdf
forecast_20100808-10_1200CDT_20100807_2000CDT_rs.pdf
landfall8_07_complete.pdf
loopcurrent_8_7.pdf

Unless there is breaking news there will not be evening reports on August 7 & 8, 2010

Please find attached the OR&R evening report for August 6, 2010.

FOR OFFICIAL USE ONLY / NOT FOR PUBLIC RELEASE

NOAA Emergency Response Division (ERD)
Report # 104: August 6, 2010 2345 PDT
MC 252 DEEPWATER HORIZON Incidents, Gulf of Mexico, Major Spill Incident
Unless there is breaking news there will not be evening reports on August 7&8, 2010

Incident status, Day 109:

Source Control:
After more than 24 hours of curing, the cemented MC252 well exhibited no anomalies. This afternoon, Source Control began conducting pressure checks to ensure the cement filled the well bore properly. During the pressure checks positive pressure will be transmitted through the well bore in increasing amounts up to 1000 psi. If the pressure stabilizes, that indicates the cement deployed correctly into the formation and the well bore casing. Initial indications looked encouraging, but the test continues so the complete results are pending.

Drilling of the primary relief well resumed today. Source control dug approximately 15 feet before pulling the drill string to conduct a ranging run. Based on the results of the ranging, Source Control will adjust the drill angle as necessary to target the intercept point in the MC252 well annulus, approximately 100 feet down and four feet over. Ranging operations should conclude Saturday and drilling will recommence on Sunday. Source Control plans to conduct drilling/ranging operations in 30 foot segments until intercepting the MC252 annulus, possibly as soon as August 13th. Once that occurs, the team will evaluate the condition of the annulus and appropriately execute Bottom Kill procedures, ultimately securing any remaining pathway through which oil from the MC252 well could flow.

Currently BP is finalizing its Plug and Abandonment (P&A) plan to comply with the national regulatory abandonment procedures. According to its P&A plan, BP would remove the capping stack and DWH BOP as early as August 19th pending successful completion of Bottom Kill. Once the well is killed and the well bore isolated from the surrounding formation, BP will attach a "plug" to the top of the well bore thereby completing the formal abandonment process and permanently sealing the MC252 well.

SCAT Stage III/IV:
As the Unified Command works toward transitioning from response to restoration, SCAT continues to develop its sign-off strategy with all agency representatives. To most appropriately address the "How clean is clean?" issue, SCAT will incorporate a two phase approach to complete sign-offs for any given area. Stage III defines the cleanup end points for an oil impacted area. Once signed off under Stage III, the same area will be re-inspected sometime during late winter or early sprin



Thick layer of buried oil near Long Beach, MS. **Photo: NOAA**

coordinators are finalizing the Stage IV final sign-off criteria to use when teams resurvey the area. They must ensure that response has accounted for any lingering issues like sand and sediment buried oil resurfacing, ongoing scattered tarball impacts, sedimented oil in nearshore troughs washing ashore during winter storms, etc. Once the stage Stage IV sign-off is complete, restoration can assume responsibility for the area, forging the way ahead toward recovery.

Overflights during the Transition:
Although it may seem like overflight observers could run out of ways to report "no recoverable oil observed," negative information is extremely important during the transition from response to restoration. From day one in recognition of their unparalleled experience and unmatched expertise, the Coast Guard immediately requested the calibrated eyes of NOAA oil observers to reliably survey and determine the full extent of oiling in the response area. In developing its transition plans the Unified Command specifically defined the end points in terms of observations made by the NOAA overflight specialists.



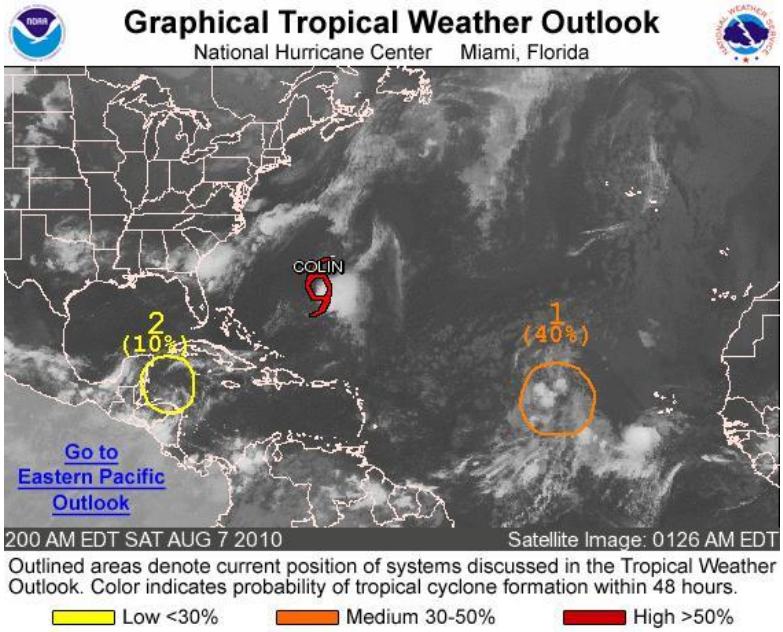
Silver and dull sheen observed south of Timbalier Bay. **Photo: ENS Proie**

So far based on NOAA reports of no recoverable oil in the offshore and nearshore areas, the Unified Command has recalled much of the skimming fleet. Out of Mobile, operations has requested a 10 – 12 day coastline survey from Mississippi to Appalachicola, FL flying four, eight and twelve miles paralleling the coast to definitively end the response and transition to recovery. Recently, the Unified Command has requested that NOAA observers investigate satellite and aircraft imagery anomalies. They observe mostly sargassum and some thin sheens. For more than a week, NOAA oil observers have seen no recoverable oil, a welcome relief for the Gulf of Mexico.

Tropical Weather Update:
As discussed last night Tropical Storm Colin continues to recurve toward the north-northeast over the Atlantic. TS Colin will be no factor for the response AOR. Two additional systems remain on the National Hurricane Center's watch list.

The first is a large area of disturbed weather associated with an area of low pressure located over the central Atlantic about 800 miles west of the Cape Verde Islands. Because environmental conditions are favorable for slow development of this system during the next few days, NHC provides a medium chance (40%) of it becoming a tropical cyclone in the next 48 hours.

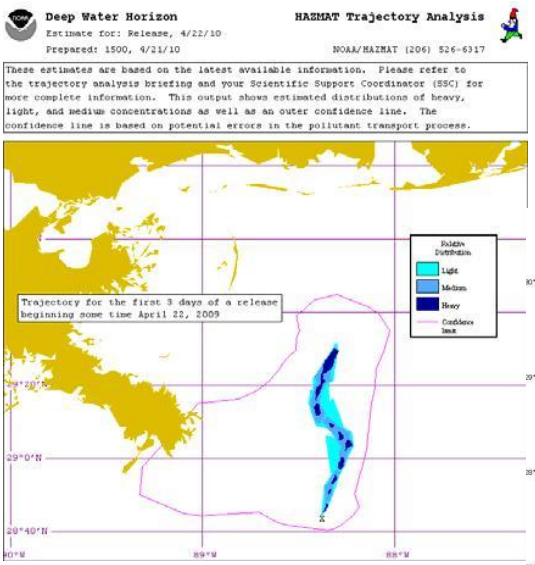
The second system: a tropical wave that lingered over the western Caribbean for the past two days. Shower activity has decreased recently and it exhibits no signs of having a surface circulation. NHC does not expect significant development of this system before it moves inland over the Yucatan Peninsula and Belize tomorrow. As a result the system only receives a low chance (10%) of becoming a tropical cyclone in the next 2 days. Response operations will continue to monitor these systems throughout the weekend.

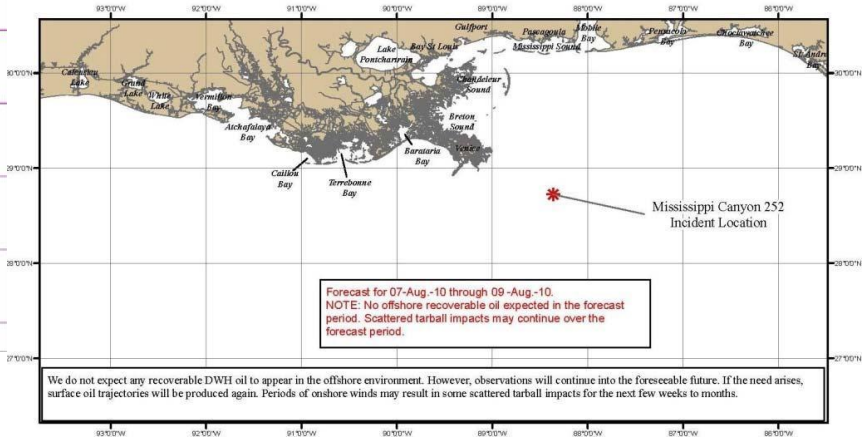


Trajectories:

For the first time in more than 100+ days the ERD trajectory forecast shows no recoverable oil nor does it carry an uncertainty boundary. Unless additional release occurs only one trajectory product will be produced per day. It is important to note that no recoverable oil does not mean the absence of oil altogether. Throughout the area there remains oil on the surface as isolated sheens and scattered tarballs. As a result today's trajectory carries the folowing text descriptions:

No recoverable oil has been reported by daily overflights since July 30th. Daily satellite analyses have indicated a decreasing number of possible oil anomalies since the well has been capped. The anomalies have been decreasing in size as well. Since July 30th, overflights have indicated the satellite anomalies have been a result of seaweed and sheens which are not recoverable. We do not expect any recoverable DWH oil to appear in the offshore environment. However, observations will continue into the forseeable future. If the need arises, surface oil trajectories will be produced again. Periods of of onshore winds may result in some scattered tarball impacts for the next few weeks to months





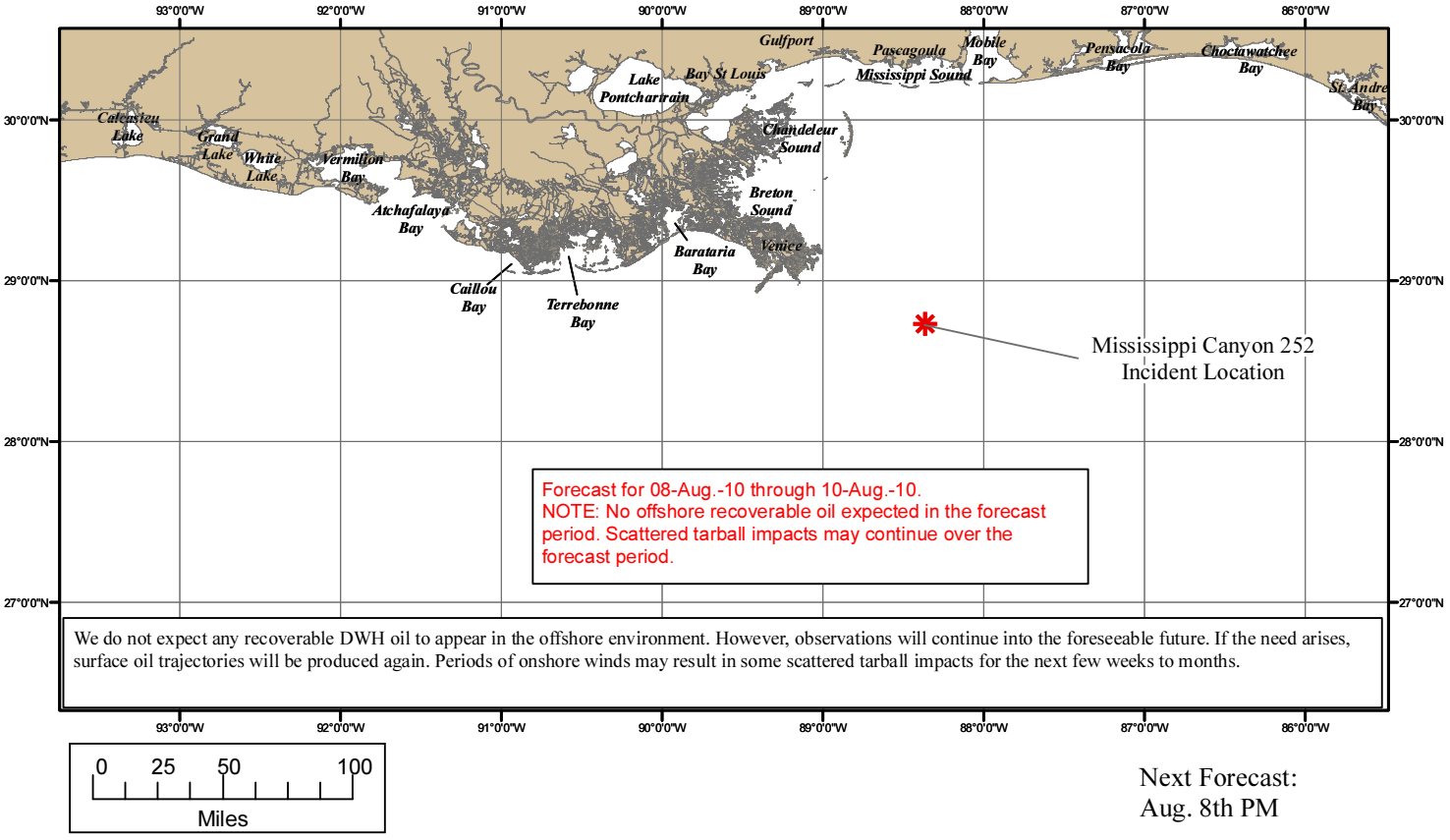
Trajectories: Day 1 & Today

Nearshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R **Nearshore**

Estimate for: 1200 CDT, 8/08/10 through 8/10/10
Date Prepared: 2000 CDT, Saturday, 8/07/10

No recoverable oil has been reported by daily overflights since July 30. Daily satellite analyses have indicated a decreasing number of possible oil anomalies since the well has been capped, and the anomalies have been decreasing in size. Since July 30, overflights have indicated the satellite anomalies have been a result of seaweed and sheens which are not recoverable.



Next Forecast:
Aug. 8th PM



This product will be phased out when it is no longer needed to support operations.

Shoreline Impact Outlook

Prepared Saturday, Aug. 07, 2010

No new shoreline impacts expected from offshore slicks and sheens. Onshore winds may continue to bring scattered tarballs onshore.

0 25 50 100
Miles

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Deepwater Horizon MC252

Loop Current Location Relative to Oil Slick

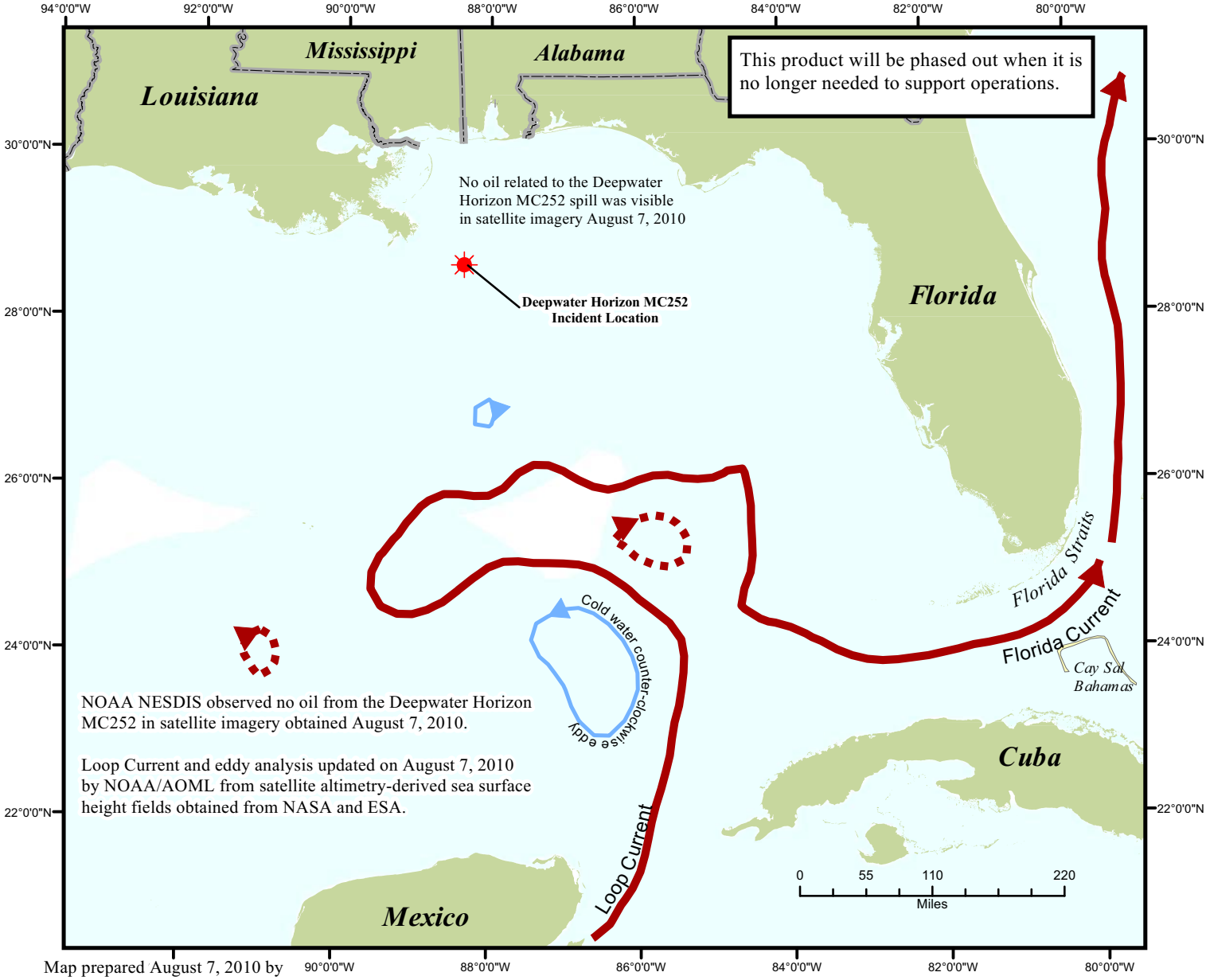
August 7, 2010

The National Oceanic and Atmospheric Administration (NOAA) is closely monitoring the Deepwater Horizon MC252 (BP oil spill) slick's proximity to the Loop Current in the Gulf of Mexico.

- The Loop Current is an area of warm water that comes up from the Caribbean, flowing past the Yucatan Peninsula (Mexico) and into the Gulf of Mexico.
- It generally curves east across the Gulf and then flows south parallel to the west Florida coast; there it becomes the Florida Current as it moves through the Florida Straits, joins the Gulf Stream and travels up the Atlantic Coast, veering progressively farther away from the coast.
- Sometimes the northern part of the Loop Current separates from the main Loop Current, forming a large rotating region of water, known as an eddy.
- There are also smaller eddys that form along the edges of the Loop Current.

Both the location of the Loop Current and location of the oil slick are dynamic and constantly changing. The present location of the oil is identified daily through analysis of satellite imagery, observer overflights and advanced technology on aircraft. This information is also keeping us informed of how far away the oil is from the Loop Current each day. If oil from the spill enters the Loop Current, it would take at least a few days or more to reach the Florida Straits. During this transit time, the natural processes of evaporation and dispersion would reduce the oil volume significantly, and make it less toxic. The remaining oil would be mostly in the form of tarballs.

The figure below, depicts the present location of the Loop Current and the location of the Deepwater Horizon well. There has been no indication of oil in or near the Loop Current for over seven weeks, the well has not released any significant oil since July 15 and there has been no oil observed on the water surface for a number of days; therefore, at present there is no risk of the Loop Current transporting oil. NOAA will continue to monitor the situation daily until further notice.



Map prepared August 7, 2010 by
NOAA Emergency Response Division

Document ID: 0.7.19.1905.4

Unless there is breaking news there will not be evening reports on August 7 & 8, 2010

Please find attached the OR&R evening report for August 6, 2010.

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Unless there is breaking news there will not be evening reports on August 7 & 8, 2010

Please find attached the OR&R evening report for August 6, 2010.

FOR OFFICIAL USE ONLY / NOT FOR PUBLIC RELEASE

Document ID: 0.7.19.1905.6

Received(Date): Mon, 09 Aug 2010 05:36:11 -0400
From: Christopher.S.Moore@noaa.gov
Subject: morning reports
To: Deepwater.HorizonDist@noaa.gov
forecast_20100809-11_1200CDT_20100808_2000CDT_rs.pdf
landfall8_08_complete.pdf
loopcurrent_8_8.pdf

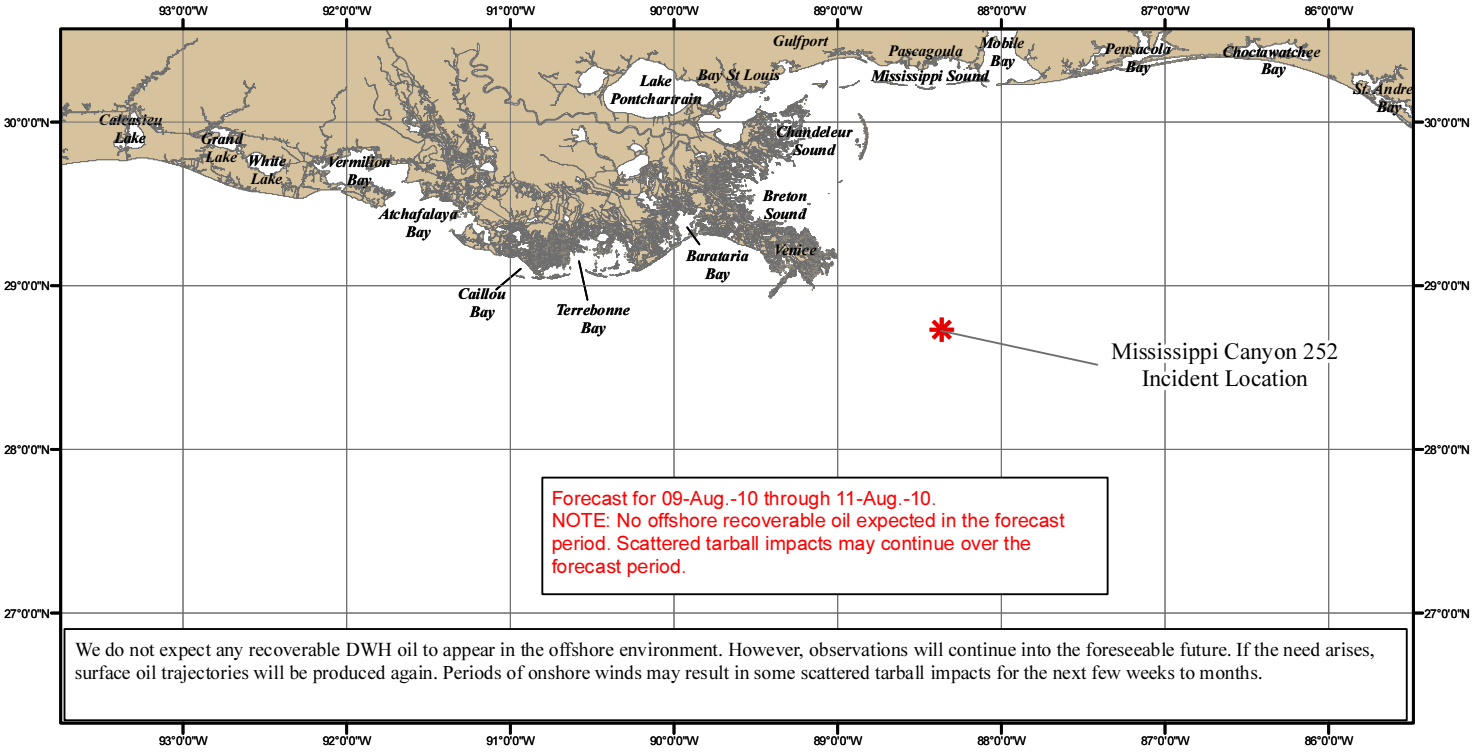
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Nearshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R **Nearshore**

Estimate for: 1200 CDT, 8/09/10 through 8/11/10
Date Prepared: 2000 CDT, Sunday, 8/08/10

No recoverable oil has been reported by daily overflights since July 30. Daily satellite analyses have indicated a decreasing number of possible oil anomalies since the well has been capped, and the anomalies have been decreasing in size. Since July 30, overflights have indicated the satellite anomalies have been a result of seaweed and sheens which are not recoverable.



Next Forecast:
Aug. 9th PM



This product will be phased out when it is no longer needed to support operations.

Shoreline Impact Outlook

Prepared Sunday, Aug. 08, 2010

No new shoreline impacts expected from offshore slicks and sheens. Onshore winds may continue to bring scattered tarballs onshore.

0 25 50 100
Miles

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Deepwater Horizon MC252

Loop Current Location Relative to Oil Slick

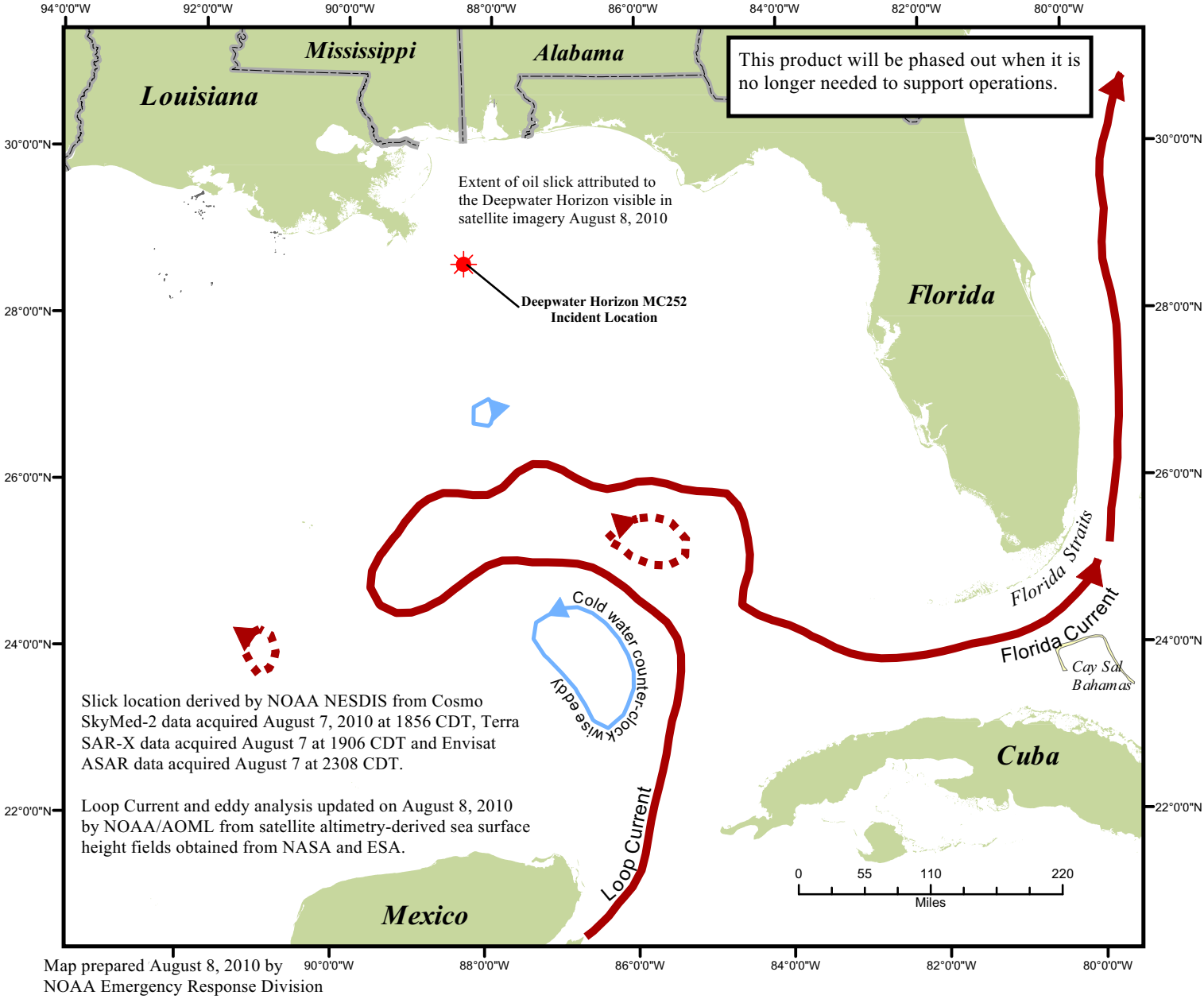
August 8, 2010

The National Oceanic and Atmospheric Administration (NOAA) is closely monitoring the Deepwater Horizon MC252 (BP oil spill) slick's proximity to the Loop Current in the Gulf of Mexico.

- The Loop Current is an area of warm water that comes up from the Caribbean, flowing past the Yucatan Peninsula (Mexico) and into the Gulf of Mexico.
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Map prepared August 8, 2010 by
NOAA Emergency Response Division

Document ID: 0.7.19.2124.3

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Document ID: 0.7.19.2124.4

Received(Date): Sat, 14 Aug 2010 07:12:33 -0400
From: "Christopher.S.Moore" <Christopher.S.Moore@noaa.gov>
Subject: morning reports
To: Deepwater.HorizonDist@noaa.gov
loopcurrent_8_13.pdf
Deepwater_Horizon_Report_107.pdf
forecast_20100814-16_1200CDT_20100813_2000CDT_rs.pdf
landfall8_13_complete.pdf

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CAPT Christopher S. Moore, NOAA

Director, NOAA Homeland Security Program Office

Office: (301) 713-3310 x 129

Fax: (301) 713-1641

Cell: (202) 577-8492

E-mail: *christopher.s.moore@noaa.gov*

Deepwater Horizon MC252

Loop Current Location Relative to Oil Slick

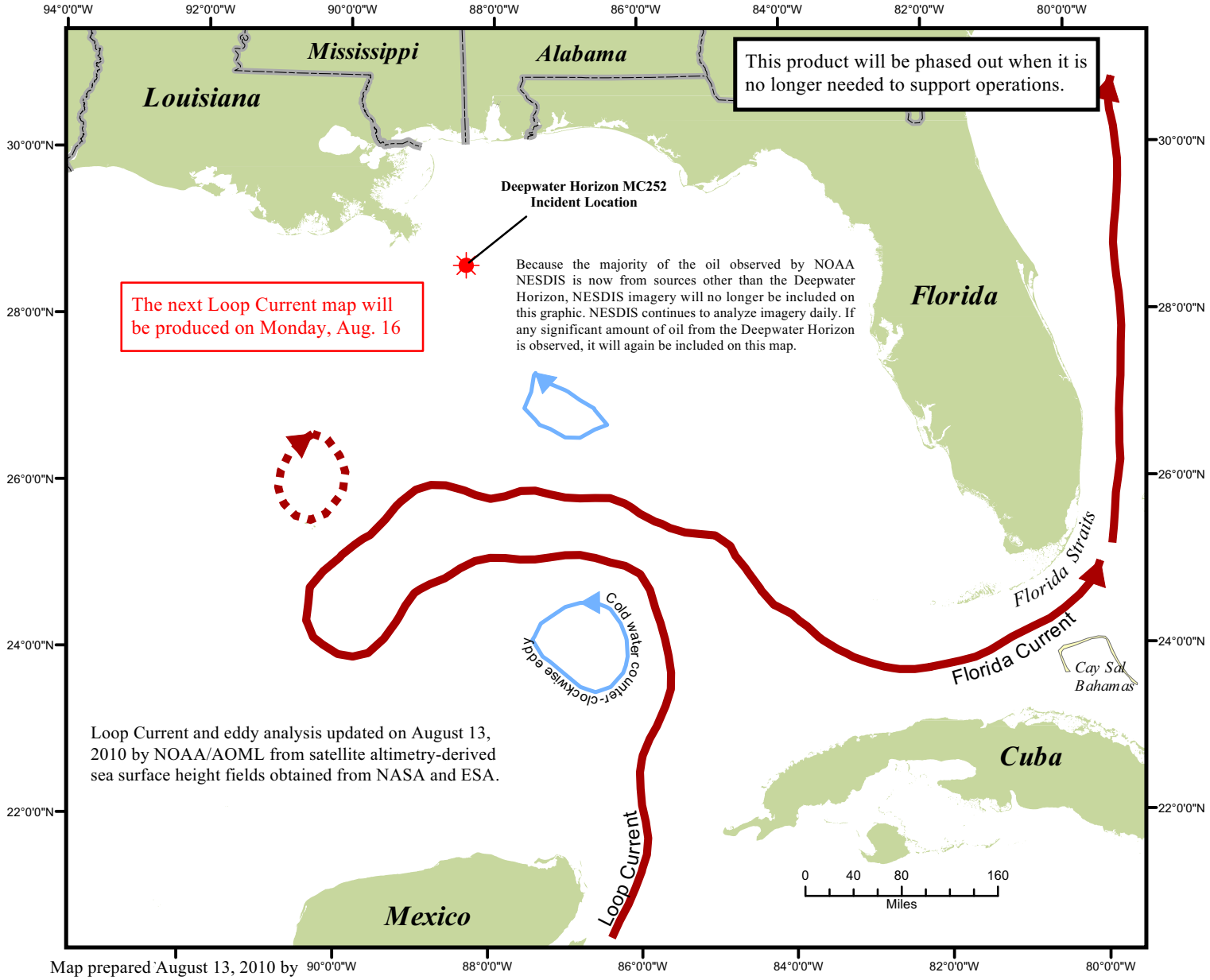
August 13, 2010

The National Oceanic and Atmospheric Administration (NOAA) is closely monitoring the Deepwater Horizon MC252 (BP oil spill) slick's proximity to the Loop Current in the Gulf of Mexico.

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Map prepared August 13, 2010 by
NOAA Emergency Response Division

Document ID: 0.7.19.1721.1

NOAA Emergency Response Division (ERD)
Report # 107: August 13, 2100 2010 PDT
MC 252 DEEPWATER HORIZON Incidents, Gulf of Mexico, Major Spill Incident

Incident status, Day 116:

Questions about the Bottom Kill:
After several days of testing and discussion, the Unified Command has decided that the relief well must be finished and the bottom kill will be necessary to fully seal the well. Work on the relief well was suspended earlier this week because of bad weather. Last week, BP plugged up the ruptured oil well from the top with mud and cement, and for a while, it appeared that the relief well that BP has been drilling might not be necessary after all. Pressure tests conducted on Thursday showed that cement pumped in from the top had plugged the gap between the well's inner pipe and its outer casing but it wasn't clear whether the top kill had provided a permanent seal. Engineers are working to ensure the bottom kill does not damage the temporary cap. New equipment to ease the pressure inside the well might need to be installed, which may delay the timeline for the final fix.

False Positives:
With the well capped for 29 days, visible oil sheens continue to decrease, but algal blooms remain common in the Gulf. These blooms are easily misidentified as surface oil during overflight observations and the number of false positives, or incorrect identification of an anomaly as oil, have increased recently. Several sampling teams are on call to verify sightings of potential oil to minimize false positives. Algal blooms are common along the Gulf coast near Chandeleur Bay, Mobile Bay, and Sand Bluff and will likely continue to complicate oil identification. The USCOE also reported oily sludge in the top five feet of a core sample for a dredging assessment. Upon further investigation, the sludge was identified as organic matter with a possible thin layer of oil near the surface. Rapid response to potential false positive reports will expedite clean-up efforts and minimize unnecessary public concerns regarding remaining surface oil.

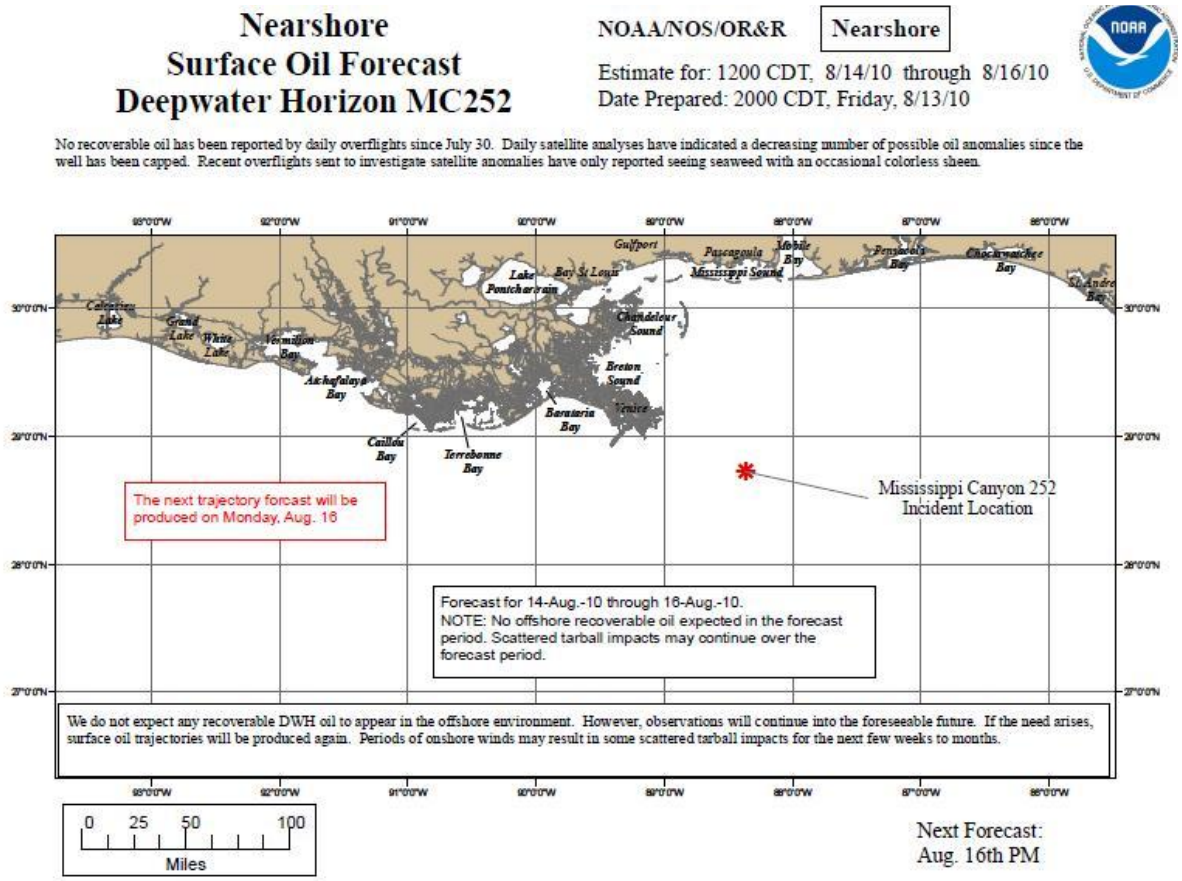
Florida Sea Turtle Relocation:
The Environmental Unit reported that as of yesterday sea turtle nests will no longer be relocated from the pan-handle to the East Coast of Florida. The sea turtle nesting season ends next month and DOI would like to end the relocation effort for the entire Gulf region before the end of the season if possible. This would maximize imprinting of hatchlings to Gulf beaches ensuring return of nesting females to these same Gulf beach locations.

Tropical Weather Update:
The two systems being watched by the National Hurricane Center earlier this week have dissipated and there are no tropical cyclones under development at this time. The broad weak circulation of what was once tropical depression five moved slowly northward into coastal Mississippi this morning. High pressure will briefly build in behind the system for the weekend. However, with the remnant low meandering around the Gulf south, scattered showers and thunderstorms will remain possible. The remnant low is forecast to loop back into the northern

Gulf late Sunday or Monday and move into southeast Louisiana again on Tuesday or Wednesday. This will result in another round of elevated winds and higher chances of rain.

Operation Cleansweep:
The NIC has directed the area commands to renew efforts to find subsurface oil, including both shallow coastal areas and the deep plume, and to monitor and track that oil for 60 days. ERD is helping to develop a plan that will bring in academics and variety of Federal agencies. Public stakeholder groups including fishermen may also be included to improve public confidence that we are looking in right spots for nearshore and subsurface oil.

Trajectories:
Because there was no significant oil identified today, trajectory runs generated no oil slick contours and the final trajectory maps were blank. So, instead of producing three blank trajectory maps - for 24, 48, and 72 hour forecasts - this one trajectory forecast covers the full 72-hour period. ORR next week will transition to a Monday, Wednesday, Friday schedule for release of trajectory, loop current, and outlook products. There will be no products released this weekend.

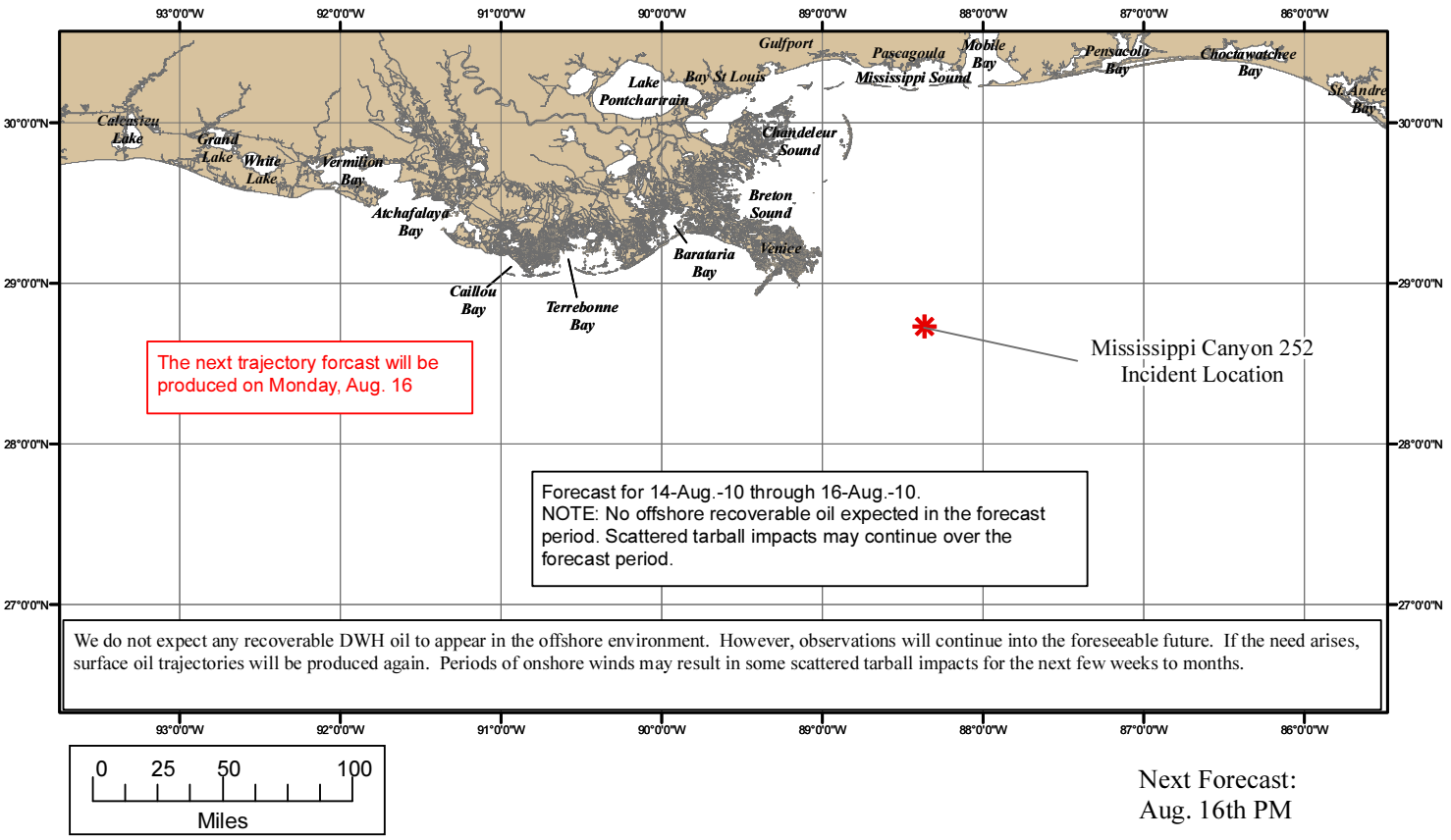


Nearshore
Surface Oil Forecast
Deepwater Horizon MC252

NOAA/NOS/OR&R **Nearshore**

Estimate for: 1200 CDT, 8/14/10 through 8/16/10
Date Prepared: 2000 CDT, Friday, 8/13/10

No recoverable oil has been reported by daily overflights since July 30. Daily satellite analyses have indicated a decreasing number of possible oil anomalies since the well has been capped. Recent overflights sent to investigate satellite anomalies have only reported seeing seaweed with an occasional colorless sheen.



Next Forecast:
Aug. 16th PM



The next trajectory forcast will be produced on Monday, Aug. 16

This product will be phased out when it is no longer needed to support operations.

Shoreline Impact Outlook

Prepared Friday, Aug. 13, 2010

No new shoreline impacts expected from offshore slicks and sheens. Onshore winds may continue to bring scattered tarballs onshore.

0 25 50 100
Miles

FOR INTERNAL USE ONLY

Received(Date): Sun, 22 Aug 2010 06:55:02 -0700
From: Patrick Rutten <Patrick.Rutten@noaa.gov>
Subject: Human Health - JAMA Article
To: 'Pat Montanio' <Pat.Montanio@noaa.gov>,'"john.rapp@noaa.gov"' <John.Rapp@noaa.gov>,'Jean Cowan' <Jean.Cowan@noaa.gov>, 'Cheryl Brodnax' <Cheryl.Brodnax@noaa.gov>

Something to keep on our radar… .the stats on the Exxon Valdez are sobering…… ..good article to read on attached link.

16:31/01. HEALTH EFFECTS OF THE GULF OIL SPILL: The oil spill in the Gulf of Mexico poses direct threats to human health from inhalation or dermal contact with the oil and dispersant chemicals, and indirect threats to seafood safety and mental health. In Louisiana in the early months of the oil spill, more than 300 individuals, three-fourths of whom were cleanup workers, sought medical care for constitutional symptoms such as headaches, dizziness, nausea, vomiting, cough, respiratory distress, and chest pain. These symptoms are typical of acute exposure to hydrocarbons or hydrogen sulfide, but it is difficult to clinically distinguish toxic symptoms from other common illnesses.

The US Environmental Protection Agency (EPA) set up an air monitoring network to test for crude oil components that cause serious health problems for humans and wildlife: volatile organic compounds (VOCs), particulate matter, hydrogen sulfide, and naphthalene. An analysis of the EPA data by the Centers for Disease Control and Prevention concluded: "The levels of some of the pollutants that have been reported to date may cause temporary eye, nose, or throat irritation, nausea, or headaches, but are not thought to be high enough to cause long-term harm." Data posted on BP's Web site suggest that air quality for workers offshore is worse than on land. Local temperatures pose a risk of heat-related illness, which is exacerbated by wearing coveralls and respirators, implying a trade-off between protection from chemical hazards and heat.

Skin contact with oil and dispersants causes de-fatting, resulting in dermatitis and secondary skin infections. Some individuals may develop a dermal hypersensitivity reaction, erythema, edema, burning sensations, or a follicular rash. Some hydrocarbons are phototoxic.

In the near term, various hydrocarbons from the oil will contaminate fish and shellfish. Although vertebrate marine life can clear nonvolatile polycyclic aromatic hydrocarbons (PAHs-they include mutagens and probable carcinogens) from their system, these chemicals accumulate for years in invertebrates. The Gulf provides about two-thirds of the oysters in the United States and is a major fishery for shrimp and crab. Trace amounts of cadmium, mercury, and lead occur in crude oil and can accumulate over time in fish tissues, potentially increasing future health hazards from consumption of large fin fish such as tuna and mackerel.

Studies following major oil spills in Alaska, Spain, Korea, and Wales have documented elevated rates of anxiety, depression, posttraumatic stress disorder, and psychological stress. A mental health survey of 599 local residents 1 year after the *Exxon Valdez* spill found that exposed individuals were 3.6 times more likely to have anxiety disorder, 2.9 times more likely to have posttraumatic stress disorder, and 2.1 times more likely to score high on a depression index. Adverse mental health effects were observed up to 6 years after the oil spill. To see the full 16 August *Journal of the American Medical Association* (*JAMA*) article by Gina Solomon, MD, MPH and Sarah Janssen, MD, PhD, MPH, go to: http://jama.ama-assn.org/cgi/content/full/jama.2010.1254v1?etoc.

Thanks,

Pat

Patrick Rutten

Regional Supervisor

NOAA Restoration Center, Southwest Region

777 Sonoma Avenue

Room 219-A

Santa Rosa, CA 95404

B6 Privacy direct

B6 Privacy fax

Received(Date): Wed, 25 Aug 2010 17:35:39 -0400
From: "Dr. Jane Lubchenco" <Announcement@noaa.gov>
Subject: NOAA Science Workshop White Paper
Attachment

Message from the Under Secretary Banner

August 25, 2010

Dear NOAA Staff,

On April 22, 2010, we reached an early milestone in our efforts to strengthen NOAA science with the completion of the first *NOAA Science Workshop*. 70 top scientists and science managers from across the organization came together under the capable leadership of Co-Chairs Paul Sandifer and Randy Dole, in Washington, DC, for two and a half days of productive meetings.

The Workshop – sponsored and supported by the NOAA Research Council – brought NOAA scientists together to think freely about the critical science and management challenges we face now and in the next 5-20 years. The result is a White Paper which you can view and download from the Research Council website at: (http://nrc.noaa.gov/plans_docs/2010/Science_Workshop_WP_FINAL.pdf).

The White Paper outlines a set of specific grand challenges that will drive our research and development over the upcoming years. These challenges have already been identified in the most recent draft of the Next Generation Strategic Plan and have been briefed to the NOAA Science Advisory Board.

With this note, these recommendations are now available to all NOAA staff. I invite your feedback as we chart the course for NOAA science in the coming years. Please provide your comments on both the science challenges and the management challenges directly to the Research Council Executive Secretariat at oar.rc.execsec@noaa.gov <mailto:oar.rc.execsec@noaa.gov>.

This Workshop is the first of many similar events the Research Council will organize. Future events will broaden the scope to include our extramural partners, while also honing in on the specific actions we will need to meet these grand challenges. Please review at least the executive summary of this White Paper and think about what these recommendations mean to you and your office. Please contact the Research Council Executive Secretariat to either comment or participate.

My thanks to all who helped make the first NOAA Science Workshop so successful. I'm excited about the great ground work that has been laid for the future of NOAA science.

Sincerely ,

Dr. Lubchenco signature

Dr. Jane

Join me on Facebook: www.facebook.com/noaa.lubchenco
<http://www.facebook.com/noaa.lubchenco>

This message was generated for the Under Secretary of Commerce
for Oceans and Atmosphere and NOAA Administrator by the NOAA
Information Technology Center/Financial and Administrative
Computing Division

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August 25, 2010

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My thanks to all who helped make the first NOAA Science Workshop so successful. I'm excited about the great ground work that has been laid for the future of NOAA science.

Sincerely ,



Dr. Jane

Join me on Facebook: www.facebook.com/noaa.lubchenco

This message was generated for the Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator by the NOAA Information Technology Center/Financial and Administrative Computing Division

Document ID: 0.7.19.1847

Received(Date): Thu, 26 Aug 2010 06:04:59 -0500
From: Jen.Pizza@noaa.gov
Subject: Fwd: AUG25 Sitrep from Sub-Surface Monitoring Branch
To: DWH.Leadership@noaa.gov
Attachment

FYI

Received(Date): Wed, 25 Aug 2010 23:42:56 -0500
From: Samuel Walker <Sam.Walker@noaa.gov>
Subject: AUG25 Sitrep from Sub-Surface Monitoring Branch
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Dear All-

Attached please find the latest situation report from the Sub-surface Monitoring team here at UAC.

V/r,
Sam

--
Samuel P. Walker, PhD
Senior Technical Data Manager
NOAA Integrated Ocean Observing System (IOOS) Program
1100 Wayne Avenue, Suite 1225
Silver Spring, MD 20910
B6 Privacy - office
B6 Privacy - fax
B6 Privacy
sam.walker@noaa.gov
http://ioos.gov

Subsurface Monitoring Implementation Status Report 25 August 2010

Implementation Planning:

- Hosted Communications Strategy meeting at UAC. Included representation from NOAA Office of Communications, Area Command, ICP-Houma, ICP-Mobile, and federal and state public health agencies. Objective was to frame an overarching strategy, incorporate local-level input, and define some initial information products which can be shared across the theater.

- Continued development of framework document for Implementation Plan.

- Continued to refine appropriate protocols to evaluate biodegradation rate of Macando oil in deep sea environment.

- A sediment sampling plan was designed that integrates samplers (box corers and multicorer) and remote sensing techniques (AUV deployed side scan sonar) to efficiently evaluate the presence of oil on the continental shelf. This plan involves selecting 3 corridors approximately 200m wide that run from the wellhead, across the shelf, to the most heavily oiled shorelines recorded. The landward endpoints of these transects are Barataria Bay, the Chandeleur Sound, and Petis Bois Island.

- Updated two Mission Templates (gliders/AUVs, and data management) with costing information.

- Finalized the 0-3 mile sampling locations for the implementation strategy, and initiated development of sampling plan and protocols for those locations.

- Began formally documenting execution protocols for new standard mapping products to ensure efficient delivery over the duration of the sub-surface monitoring efforts.

- Continued to refine and review initial metrics associated with sub-surface monitoring effort.

- Historical seep maps and bathymetry provide to operational team.

Operations:

- 0700 Command Staff briefing and conducted 0845 status meeting at Unified Area Command.

- Continued Mission Guidance with 3 vessels. Directed vessels to continue on sampling grid to determine the extent of the Dissolved Oxygen anomaly. Also, NOAA Ship PISCES continued to use AquaTracker to identify and map hydrocarbon signatures.

- Continued to incorporate SIMAP and NOAA ORR trajectory models into adaptive mission plans.

- Offshore Supply Vessel *Gulf Majesty* retrieved NRDA samples from and delivered supplies to NOAA Ship *Pisces* while underway, approximately 120 nm south of Dulac, LA. Transfer went smoothly; samples are destined for NRDA contract labs.

Document ID: 0.7.19.1759.1

Subsurface Monitoring Implementation Status Report 25 August 2010

Implementation Planning:

- Hosted Communications Strategy meeting at UAC. Included representation from NOAA Office of Communications, Area Command, ICP-Houma, ICP-Mobile, and federal and state public health agencies. Objective was to frame an overarching strategy, incorporate local-level input, and define some initial information products which can be shared across the theater.

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Document ID: 0.7.19.1759.1.1

- Input from the Houma SMU, along with other agencies, is currently being used to help develop a unified communications plan with clear logistics for vetting information to UAC, NOAA, and the public. This plan is being written by NOAA external affairs.

- Identified the Chief Scientist for the next cruise on the NOAA Ship PISCES. In addition to the current efforts underway, Dr. John Kessler from Texas A&M and colleague Dr. David Valentine of University of California, Santa Barbara bring a strong background in methane geochemistry.

- Began working with members of the Ocean Science Advisory Team (OSAT) to familiarize them with Mission Guidance and data access.

- Provided Grid Coordinates to ASA for additional mission planning.

- Hosted NOAA National Data Buoy Center representatives at UAC, to brief on data flow and integration issues associated with sub-surface monitoring efforts.

Products and Metrics:

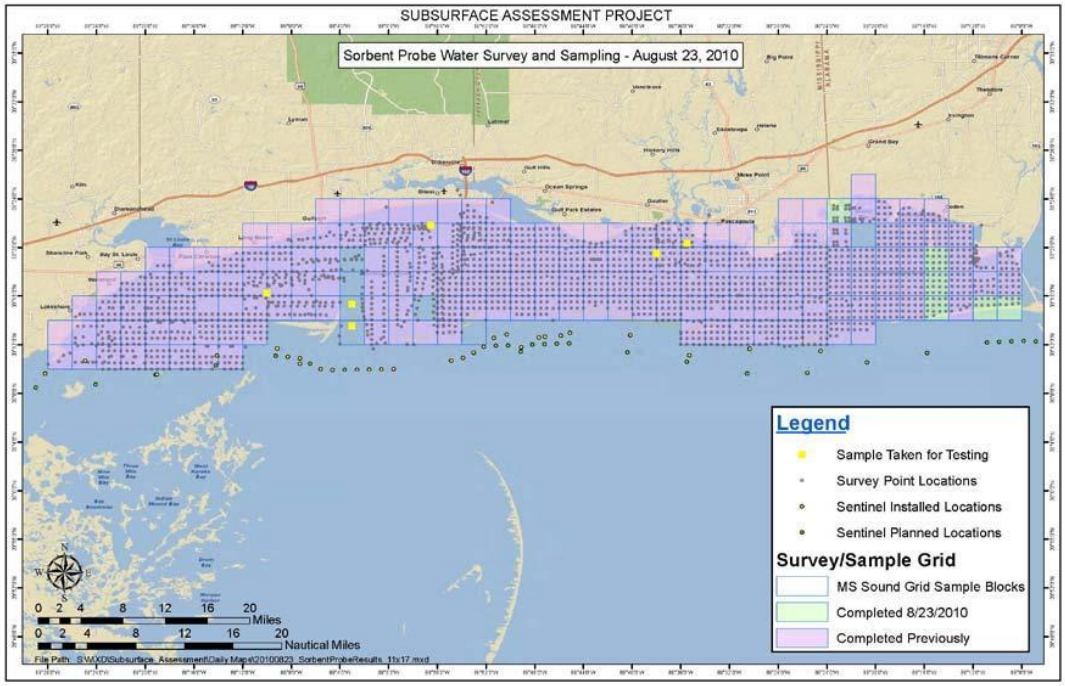
- Subsurface monitoring effort highlighted in UAC press release: http://www.deepwaterhorizonresponse.com/go/doc/2931/882463/

- Conducted interview with NBC on subsurface monitoring branch history and activities.

- Produced daily mission guidance, vessel status, and daily sampling locations maps.

- Finalized composite sampling locations map (using validated data from SCRIBE database).

- Began to integrate ICP-Mobile near-shore sampling data into ERMA. See figure below, showing location of sorbent probe sampling program.



26 August Daily Rhythm for Subsurface Monitoring Implementation Team

0700 - Briefing to Command Staff (SSC; Command Briefing Room)
0800 - SMU daily morning call
0815 - Environmental Unit Meeting (Room 1501)
0845 - Subsurface Monitoring Implementation Plan Meeting (Room 1501)
1000 - Subsurface Monitoring Mapping and Data Management Meeting
1300 - Joint Analysis Teleconference
1500 - Mission Guidance Daily Call (Room 1520)
1730 - Subsurface Monitoring Implementation Plan Tag-Up (EU Area)
1800 - SMU daily end of day call
1830 - Deadline for common situation report talking points
1900 - Mission Guidance for next day sent out
2200 - Deadline for daily situation report for all UAC Activities

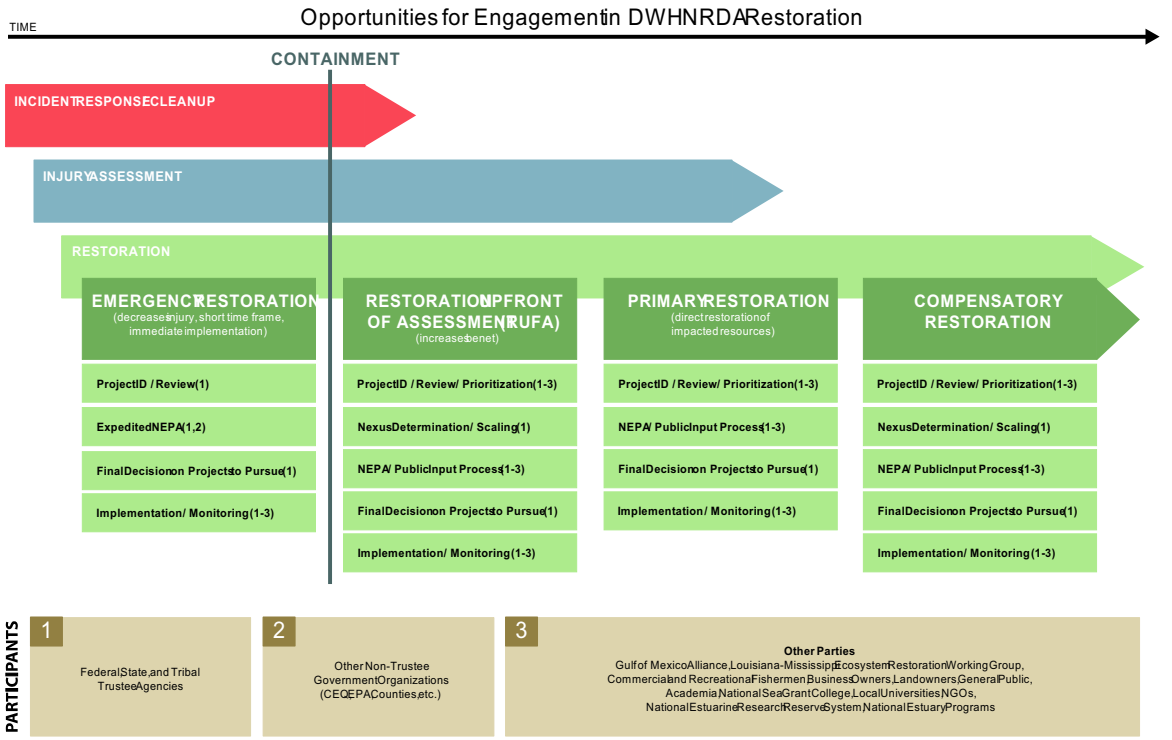
Primary POCs: Drs. Janet Baran (janet.baran@noaa.gov) and Sam Walker (sam.walker@noaa.gov)

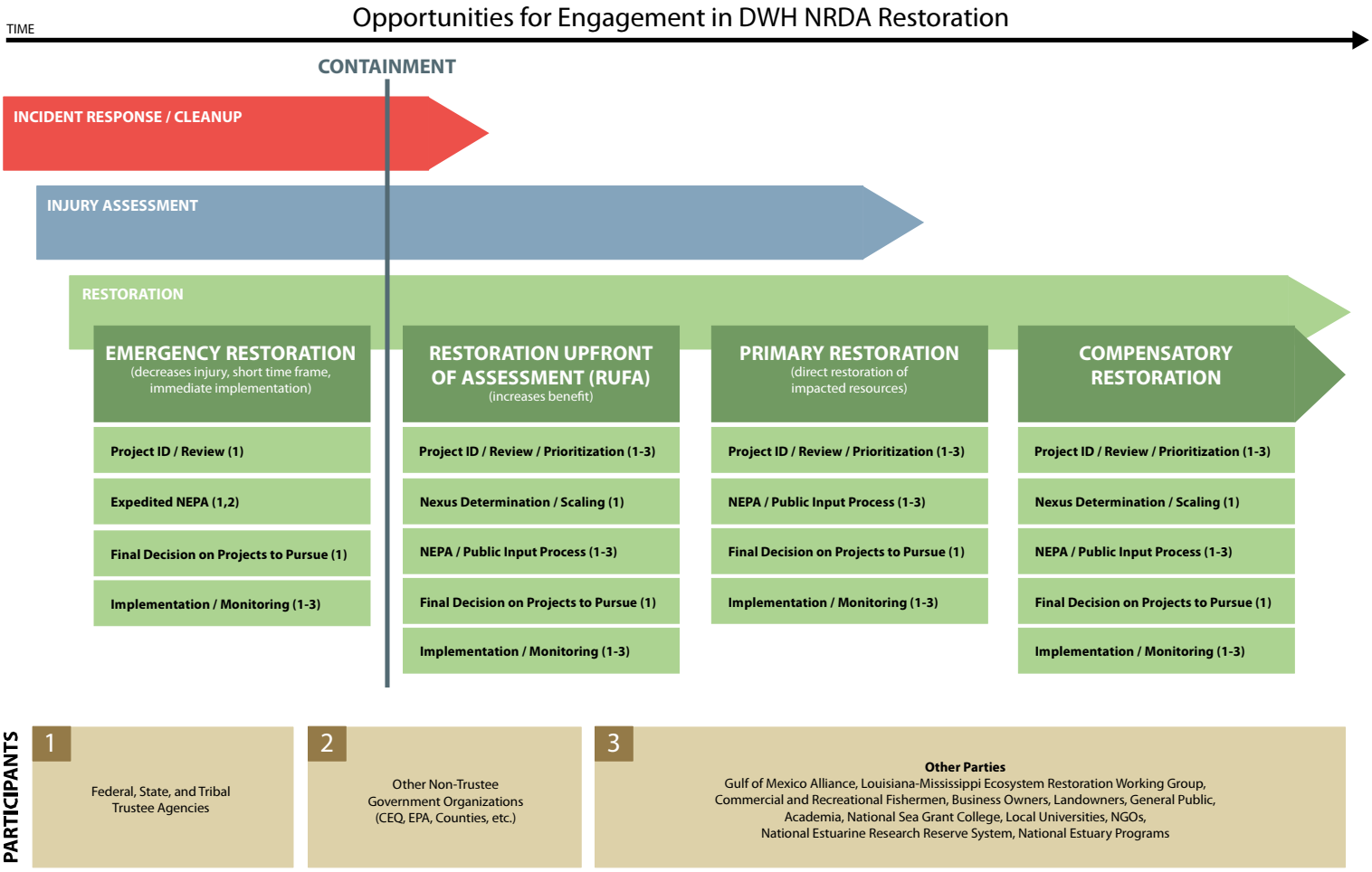
FYI

Received(Date): Thu, 26 Aug 2010 14:26:08 -0400
From: Kris Gamble <Kris.Gamble@noaa.gov>
Subject: Engagement Diagram for Pat
To: John Rapp <John.Rapp@noaa.gov>

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><<{{°> ><<{{°> ><<{{°>

Kris Gamble
Communications Specialist
NMFS - Office of Habitat Conservation,
Habitat Protection Division
1315 East West Highway
Silver Spring, MD 20910
(301) 713-4300 x133
(301) 713-4305 fax





Document ID: 0.7.19.2105.1

Received(Date): Thu, 26 Aug 2010 16:53:09 -0400
From: Brian Hostetter <Brian.Hostetter@noaa.gov>
Subject: DWH - OHC 26 AUG 10 DAILY SITREP
To: Pat Montanio <Pat.Montanio@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>, Chris Doley <Chris.Doley@noaa.gov>,John Iliff <John.Iliff@noaa.gov>, John Rapp <John.Rapp@noaa.gov>,Thomas Bigford <Thomas.Bigford@noaa.gov>,Peyton Robertson <Peyton.Robertson@noaa.gov>,Jenni Wallace <Jenni.Wallace@noaa.gov>,Shannon Sprague <Shannon.Sprague@noaa.gov>,Lisa Vandiver <Lisa.Vandiver@noaa.gov>,Victoria Zalewski ' <Victoria.Zalewski@noaa.gov>,Perry Gayaldo <Perry.Gayaldo@noaa.gov>,Juli Anna McNutt <JuliAnna.McNutt@noaa.gov>, Tom.Moore@noaa.gov,John Collins <John.Collins@noaa.gov>, Jeff Shenot <Jeff.Shenot@noaa.gov>,Joe Smith <smithj@imsg.com>, "olesb@imsg.com" <olesb@imsg.com>,Peter.Fischel@noaa.gov, Patrick Rutten <Patrick.Rutten@noaa.gov>,John Catena <John.Catena@noaa.gov>,Jennifer Steger <Jennifer.Steger@noaa.gov>,Marti McGuire <Marti.McGuire@noaa.gov>, Brendan Bray <Brendan.Bray@noaa.gov>,Robert.Wolotira@noaa.gov, Lynne.Barre@noaa.gov,Jon Kurland <Jon.Kurland@noaa.gov>, Mike.Tehan@noaa.gov,Milena Viljoen <Milena.Viljoen@noaa.gov>,Linda Emerson <Linda.Emerson@noaa.gov>,Rebecca Chiampi <Rebecca.Chiampi@noaa.gov>,Cecelia Linder <Cecelia.Linder@noaa.gov>,Jack Terrill <Jack.Terrill@noaa.gov>, Jean Cowan <Jean.Cowan@noaa.gov>,Cheryl Brodnax <Cheryl.Brodnax@noaa.gov>,Rebecca Ferro <Rebecca.Ferro@noaa.gov>, Kris Gamble <Kris.Gamble@noaa.gov>,Tim Zink <Tim.Zink@noaa.gov>, Jennifer Boyce <Jennifer.Boyce@noaa.gov>,Daphne Macfarlan <Daphne.Macfarlan@noaa.gov>,Rachel Brittin <Rachel.Brittin@noaa.gov>
tag.gif
OHC SITREP Quad 26 Aug 10.ppt

Please see attached.
--

Brian Hostetter
Restoration Center Executive Officer
NOAA Office of Habitat Conservation
1315 East West Hwy BLD SSMC3
Silver Spring, MD 20910
B6 Privacy

Please see attached.
--



Brian Hostetter
Restoration Center Executive Officer
NOAA Office of Habitat Conservation
1315 East West Hwy BLD SSMC3
Silver Spring, MD 20910
B6 Privacy

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OHC Daily Update – 26 August 2010 DEEPWATER HORIZON (MC 252) Incident



NOAA Ship *Henry B. Bigelow* is supporting the Deepwater Horizon/BP wellhead integrity monitoring effort using its sophisticated acoustic echo-sounders to monitor for oil and gas releases the vicinity.

Staffing

Staffing: There are currently 69 OHC personnel engaged in the DWH spill. There are 9 on assignment, 4 in Silver Spring or Washington, DC, 5 in the Gulf Region and 36 are fully engaged but not deployed.

Deployed (In-Field) Staff (9):

V. Zalewski, NOAA Corps
S. Meehan, RCSE
E. Ammann, RCNW
M. Viljoen, RCSW
J. Boyce, RCSW
R. Lopez, HP
S. Block, RCNE
P. Rutten, RCSW
A. Turner, RCNW

New Activities

• **ERATA:** Event posted in the 25 August SITREP for Senator Graham and Mr. Garcia has been cancelled (Brosnan).
• **Marine Mammal TWG:** Vicki Cornish, Energy Policy Analyst for the Marine Mammal Commission, provided an update during the 25 Aug Marine Mammal Technical Working Group (TWG) meeting. The Marine Mammal Commission is monitoring closely all aspects of the Deepwater Horizon incident and is in close contact with all the federal agencies engaged in activities associated with the response and assessment of the spill. During the week of 16 Aug, the Commission hosted a meeting of federal agencies in order to better understand the roles, efforts and activities of each of the offices. The result of this meeting was the determination that the best way to move forward is to prepare an interagency plan that will cover the long term research and monitoring efforts for marine mammals in the Gulf. The Marine Mammal Commission will lead the development of this document by creating an outline of the plan and then working with all the entities to gather the

New Activities (cont)

information. This document is meant to be a tool useful in identifying research needs, data and resource gaps, funding needs, etc. During the Marine Mammal Commission meeting the topic of restoration was raised highlighting the challenges to restoration of marine mammal species in the Gulf. Since the Technical Working Group meeting, Daphne Macfarlan has reached out to Vicki Cornish to lend support and provide any information that might be useful for the creation of the interagency plan.
For further information please contact Daphne Macfarlan, NOAA Restoration Center (daphne.macfarlan@noaa.ggov) or Vicki Cornish, Marine Mammal Commission (vcornish@mmc.gov) (Macfarlan)



Document ID: 0.7.19.1777.2

Received(Date): Sat, 04 Sep 2010 15:50:32 -0700
From: Frank Parker <Frank.Parker@noaa.gov>
Subject: End of Day Report (090410)
To: "NOAA Deepwater Horizon Leadership (DWH.Leadership@noaa.gov)"<DWH.Leadership@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,"Steve.Murawski@noaa.gov" <Steve.Murawski@noaa.gov>,"Beth.Lumsden@noaa.gov" <Beth.Lumsden@noaa.gov>

SCIENCE BOX (Saturday, September 4)

1 . The draft Implementation Plan for Sub-Sea and Sub-Surface Oil and Dispersant Detection, Sampling and Monitoring is being released for review today by the FOSC. The FOSC is distributing the plan to the more than 500 attendees at the LSU Science Symposium (June 3), and the three listening sessions held last week at USF, MSU, and Tulane University. The plan will also be distributed via the Consortium for Ocean Leadership. Comments on the plan are due by 5 pm Tuesday, September 7 to subsurface.plan@noaa.gov. The plan is expected to be signed after comments are reviewed. The plan's Executive Leadership Group will have a teleconference on Tuesday from 10:30 – 12:00 pm EDT that will include a briefing on the plan as well as a discussion about the process, content of the plan, and a download from the listening sessions last week.

2. The JAG DO report is expected to be released on Tuesday, September 7.

Regards,

frank

Frank M Parker

NOAA Deepwater Horizon Science Liaison

b7(C) personal information in law enforcement rec

Received(Date): Tue, 14 Sep 2010 06:18:41 -0700
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: FW: Help for james - urgent
To: Frank Parker <Frank.Parker@noaa.gov>,Mridula Srinivasan <Mridula.Srinivasan@noaa.gov>,Danielle Tillman <Danielle.Tillman@noaa.gov>,Patrick Sweeney <Patrick.Sweeney@noaa.gov>,"James.Chang@noaa.gov" <James.Chang@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Frank, Danielle: what's the most recent version of the table that Patrick started? We need at least a brief description of the purpose of each of the meetings. Please send me a copy to review.
James, here's background language on the JAG.
Thanks!
Gabby

-----Original Message-----
From: Margaret Spring [mailto:Margaret.Spring@noaa.gov]
Sent: Tuesday, September 14, 2010 9:01 AM
[redacted] b7(C) personal information in law enforcement rec
Cc: 'James.Chang@noaa.gov'
Subject: Help for james - urgent

Gabrielle and Chris,

Could you please help james compile a list of all the external science meetings and outreach we have done on dwh (incluiding the dispersant workshop), from the OSTP meeting to the meeting at Dillard?

If someone else has that info compiled please let James know.

Received(Date): Mon, 03 May 2010 09:02:33 -0400
From: Brian Pawlak <Brian.T.Pawlak@noaa.gov>
Subject: Re: [Fwd: Re: FW: taskers from Gov call]
To: icc nmfs <ICC.NMFS@noaa.gov>, John Rapp <John.Rapp@noaa.gov>
Brian_T_Pawlak.vcf

John Rapp is starting downtown today....the question came from Monica - I believe.

icc nmfs wrote:

> Brian,
> I have no clue how to route this response, which eventually needs to find it's way to the Governor of MS. Do you know if it was sent through the proper routing? Who is our HQ contact for spill response (in place of Chris Meaney). thanks
> Gallagher

Subject:
Re: FW: taskers from Gov call
From:
Steve murawski <Steve.Murawski@noaa.gov>
Date:
Sun, 02 May 2010 20:24:53 -0400
To:
John Oliver <John.Oliver@noaa.gov>
To:
John Oliver <John.Oliver@noaa.gov>
CC:
Christopher.S.Moore@noaa.gov, ICC.NMFS@noaa.gov, ICC.NOS@noaa.gov, ICC.HSPO@noaa.gov, "'david.kennedy@noaa.gov'" <David.Kennedy@noaa.gov>, 'Mike Aslaksen' <Mike.Aslaksen@noaa.gov>, "'william.conner'" <William.Conner@noaa.gov>, "'dave.westerholm@noaa.gov'" <Dave.Westerholm@noaa.gov>, 'Brian Pawlak' <Brian.T.Pawlak@noaa.gov>, Michael.S.Gallagher@noaa.gov, 'Eli Reinharz' <Eli.Reinharz@noaa.gov>

here is a short response penned by Dr. John Stein, NWFSC.

Steve

John Oliver wrote:

> Steve -- will you respond to this back thru the ICC. jo
>
> Christopher.S.Moore wrote:
>
> NMFS –

Work #1 with Brian Pawlak and JO.

NOS –

Work #1 with NMFS, OR&R, inform David Kennedy, Mike Aslasken, Bill Conner, Dave Westerholm of the tasker and get a coordinated plan forward.

Work #2 with NOS/OR*R leadership.

Work #3 with NOS/OR&R leadership.

HSPO

Enter into action tracker. Monitor status.

This is a priority issue and I need a status on this at the 0700 All Hands Meeting.

Chris

From: Mary Glackin [mailto:Mary.Glackin@noaa.gov]
Sent: Sunday, May 02, 2010 4:47 PM
To: Margaret Spring; 'monica.medina@noaa.gov'; David Kennedy
Cc: Christopher.S.Moore@noaa.gov
Subject: RE: taskers from Gov call

Looping in Chris to get these moving.

From: Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
Sent: Sunday, May 02, 2010 4:46 PM
To: Margaret Spring; 'monica.medina@noaa.gov'; David

Kennedy
Cc: Mary Glackin
Subject: taskers from Gov call

A few questions from the Gov call for which answers were insufficient:

1. For Gov. Barbour: what is biological impact of sheen? How does it differ from effects of oil?

David Hayes responded that "sheen is of limited damage to wildlife" "as it piles up as oil it is more dangerous"

True? Qualifications?

Sec Salazar and David said: we'll get some experts to brief you/your staff.

2. For Jane: do we have confidence that the National and Regional Contingency Plans are sufficient? Esp in light of rough seas and multiple days of oil? That is our roadmap; is it what's needed in light of recent experiences?

3. For Barbour: How much of oil is expected to be prevented from reaching surface with deep use of dispersants? Ranges he's heard range from 30-70% What do tests show?

--
Brian Pawlak
Deputy Director
NOAA Fisheries Service
Office of Habitat Conservation
301-713-2325 (167)

Document ID: 0.7.19.1335

301-713-1043 (Fax)

Brian Pawlak

Deputy Director
NOAA Fisheries Service
Office of Habitat Conservation

1315 East-West Hwy
Silver Spring, MD 20910

301-713-2325 ext 167 (Work)
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brian.t.pawlak@noaa.gov (Internet)

Formatted Name
Brian Pawlak

Name
Family: Pawlak
First: Brian
Middle:
Prefix:
Suffix:

Organization
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Office of Habitat Conservation

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Locality: Silver Spring
Region: MD
Postal Code: 20910
Country:

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brian.t.pawlak@noaa.gov

Title
Deputy Director

Telephone Number (Work)
301-713-2325 ext 167

Telephone Number (Fax)
301-713-1043

Version
2.1

Received(Date): Mon, 03 May 2010 20:28:34 -0400
From: Jainey Bavishi <Jainey.Bavishi@noaa.gov>
Subject: NRT Call Notes (May 3, 6:00 PM)
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>, PCO.Contacts@noaa.gov,"Sarri, Kristen" <KSarri@doc.gov>, David Kennedy <David.Kennedy@noaa.gov>,Beth Dieveney <Beth.Dieveney@noaa.gov>,Nancy Wallace <Nancy.Wallace@noaa.gov>, David Holst <David.Holst@noaa.gov>,John.Rapp@noaa.gov

NOAA Policy and PCO --- Beth Dieveney, Dave Holst, John Rapp and I have been sending the preparation materials and significant updates from the National Response Team calls which have been occurring twice daily. We will now be including you in the distribution.

Below are the notes from the May 3, 6:00 PM NRT call.

The next NRT call will be at 10:00 AM tomorrow. Dave Holst will be supporting.

FOR OFFICIAL USE ONLY

National Response Team Call
May 3, 2010
6:00 PM

Situation Status:
-The National Incident Command will be facilitating the NRT calls from now on.
-Second round of dispersants were applied subsurface, and the test was completed at 2:00 PM. The RRT is considering the results. (Note: Talking points circulated prior to the call suggested that there was no discernible difference on the surface noted from the overflight today.)
-No surface processing today because of the weather.
-The freshwater influence of the MS River may be providing a buffer to keep the oil offshore.
-The NIC will be setting up offices in DC and New Orleans.
-It has been determined that the turtle mortalities are not related to the spill.

Legal:
-The Legal Working Group met twice today.
-They are issuing guidance on document preservation.
-They are also exploring connection between Oil Pollution Act and Stafford Act as it relates to payment for unemployment benefits.

Intergovernmental:
-Want to ensure a unified interagency and intergovernmental approach.
--
Jainey K. Bavishi
Office of the Under Secretary
National Oceanic and Atmospheric Administration
1401 Constitution Avenue NW, Room 4814B
Washington, DC 20230

direct: 202-482-0632 | mobile: 202-450-0956

Received(Date): Thu, 06 May 2010 13:24:42 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: RE: FW: DRAFT Talking Points -- Dispersants
To: "Westerholm, Dave" <Dave.Westerholm@noaa.gov>,"Kenney, Justin" <Justin.kenney@noaa.gov>,"Smullen, Scott" <Scott.Smullen@noaa.gov>
Cc: "Bavishi, Jainey" <Jainey.Bavishi@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"Conner, William" <William.Conner@noaa.gov>,"Lehmann, Steve" <Steve.Lehmann@noaa.gov>,"Henry, Charlie" <Charlie.Henry@noaa.gov>,"Kennedy, David" <David.Kennedy@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"Glackin, Mary" <Mary.Glackin@noaa.gov>,"Lubchenco, Jane" <Jane.Lubchenco@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>

Justin and Scott,

It seems that you all might want to have the TP more accurately reflect NRT and/or NOAA. I don't know whose TPs these are or for what but once they are approved then they may be harder to change.

From: Dave.Westerholm [mailto:Dave.Westerholm@noaa.gov]
Sent: Thursday, May 06, 2010 1:17 PM
To: Kenney, Justin
Cc: Bavishi, Jainey; Sarri, Kristen; Deepwater NOAA Support (dwh.staff@noaa.gov); Conner, William; Lehmann, Steve; Henry, Charlie; Kennedy, David; Spring, Margaret; Glackin, Mary; Lubchenco, Jane; Medina, Monica
Subject: Re: FW: DRAFT Talking Points -- Dispersants

Justin,
While technically what is given below is true it reads like EPA makes this decision in a vacuum. Below is the simplified process taken from the National Response Team web site. I don't think you need to worry about the exceptions (I just included them because they were referred to in the main section). Also after the initial paragraphs I included the defined role of the FOSC and the SSC from the same web site (see ** below). There are a lot more details on the web site but it certainly may be easier to clear information that mirrors what is currently in the public domain.

I am also copying NOAA leadership who have been involved with the NRT calls as the role of the FOSC and EPA in dispersants approval continues to be a topic.
Dave

What is the Role of the Federal On-Scene Coordinator?
Although the OSC has primary responsibility for directing response efforts, the OSC is typically not the sole decision-maker regarding a product's use for mitigating a spill (see "Exceptions to the Rule" below). Unless the OSC has a pre-authorization

plan, the OSC must first obtain concurrence of the incident-specific EPA representative to the RRT, and, as appropriate, the RRT representatives from the state(s) with jurisdiction over the navigable waters threatened by the release or discharge. In addition, as practicable, the OSC should consult with the Department of Commerce and the Department of the Interior, as natural resource trustees. If there is no incident-specific RRT activated, the appropriate RRT members must be convened for an incident-specific authorization.

Are There Any Exceptions to the Rule?
The OSC may authorize the use of any chemical or biological countermeasure, including products not listed on the NCP Product Schedule, without obtaining the concurrence of the incident-specific RRT when the OSC believes that use of the product is necessary to substantially reduce a hazard to human life.
When the OSC authorizes the use of a product under the safety exception, the OSC must inform the EPA representative to the RRT, the RRT representatives from the state(s) with jurisdiction, and the natural resource trustees as soon as possible. Once the threat to human life has subsided, the continued use of additional products must follow the standard approval process described above.

**** What is the Role of the Federal On-Scene Coordinator?**
The NCP (40 CFR 300.105) gives the Federal OSC primary responsibility for directing response efforts and coordinating all other efforts at the scene of an oil discharge to or which threatens navigable waters. The OSC is charged with initiating defensive actions as soon as possible to prevent, minimize, or mitigate threat(s) to the public health or welfare of the United States or the environment. For oil discharges, this may include the use of chemicals, such as dispersants, and other materials that restrain the spread of the oil and mitigate its effects. This primarily consists of products listed on the NCP Product Schedule.

How are Scientific and Technical Assistance Obtained?
Because the use of chemical or biological countermeasures requires scientific and technical

expertise, the OSC will typically ask for assistance from an SSC, who serves on the OSC's staff and may coordinate input from the scientific team. The SSC can also integrate expertise from governmental agencies, universities, community representatives, and industry to assist the OSC in developing response strategies.

Jainey.Bavishi wrote:

Looks like Justin is already on the list.

Sarri, Kristen wrote:

Should NOAA be in this list?

-----Original Message-----
From: Gilson, Shannon Sent: Thursday, May 06, 2010 11:30 AM
To: Sarri, Kristen
Subject: Fw: DRAFT Talking Points -- Dispersants

Draft, but fyi

----- Original Message -----
From: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>
To: Stevens, Clark <Clark.Stevens1@dhs.gov>; Gilson, Shannon; Kenney, Justin
Cc: Nicholas_S._Shapiro@who.eop.gov <Nicholas_S._Shapiro@who.eop.gov>; Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
Sent: Thu May 06 11:27:21 2010
Subject: DRAFT Talking Points -- Dispersants

See below and let me know what you think.

Seth

Seth Oster
Associate Administrator
Office of Public Affairs
Environmental Protection Agency
(202) 564-1918
oster.seth@epa.gov

GENERAL BACKGROUND ON DISPERSANTS

* There is a list of dispersants authorized for use as part of what is called the "National Contingency Plan Product Schedule" which is overseen by EPA.

* The dispersant being used on-site at the BP spill is on that approved list.

* When this crisis occurred, the Coast Guard and EPA gave BP immediate authorization to move forward with the use of this approved dispersant for this situation in the Gulf, in an effort to mitigate the impact of the spill - while setting specific conditions to ensure the protection of the health of residents in the affected areas and the environment.

SURFACE USE VERSUS SUB-SURFACE USE OF DISPERSANTS

* There are two ways dispersants can be used: (1) on the water's surface and (2) sub-surface.

Surface Use

* With our approval, BP continues to use this dispersant on the surface of the water (BP will have to provide further information about how effective the dispersant has been)

* As it's used on the water's surface, the federal government is constantly monitoring air quality in the area to ensure that nearby residents are informed and protected. EPA is conducting ongoing air monitoring through the use of aircraft as well as fixed and mobile air monitoring stations on land, and the agency is regularly reevaluating its procedures and will make any necessary adjustments. EPA has a dedicated Web site providing daily updates of air monitoring data (www.epa.gov/bpspill).

* At any time, we reserve the right to stop BP from continuing to use the dispersant on the water's surface if we determine air quality is being adversely affected

Sub-Surface

* The Coast Guard and EPA also authorized BP to conduct two tests of

a novel approach to use this dispersant sub-surface, at the source of the leak. The tests were done to determine if the dispersant would be effective in breaking up the oil and helping to control the leaks.

* The first test was inconclusive. We are awaiting from BP the results of the second test.

* No further use of the dispersant sub-surface will take place until the results of these tests are provided to us and reviewed.

* If the tests demonstrate that the dispersant was effective, we may authorize its continued use with ongoing monitoring of its effects on the environment. We also reserve the right to, at any time, withdraw our approval of its use if we determines that the negative impacts on the environment outweigh the benefits.

Received(Date): Fri, 07 May 2010 19:07:22 -0400
From: Chris Vaccaro <Christopher.Vaccaro@noaa.gov>
Subject: Re: EPA Action: Dispersant Q&A
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Jennifer Austin <Jennifer.Austin@noaa.gov>

Correction, EPA is seeking input " Over the weekend please. We need to have this to reporters Monday."

Chris Vaccaro wrote:
> Per the e-mailed action below, from EPA Public Affairs, can you help
> provide the necessary NOAA-related input? Input is due Monday.
>
> Thank you,
> -Chris
> Subject: ACTION: DISPERSANT Q & A
>
>
> Hey folks,
> Below are the questions we're getting on dispersants. Many of these
> questions should be answered by the Coast Guard, DOI, DOC, EPA or even
> BP, but we think it would be best to get one set of agreed upon answers
> so that we can all operate from the same script, rather than send
> reporters back and forth.
> Below are some draft answers and suggestions for which agency may have
> the correct answer. Let's get this initial group to draft and sign off
> on answers and then I'll get OMB sign off.
> Let me know if you have something to change/add to a draft answer, etc.
> This is a free exchange of ideas here... nothing set in stone.
> Thanks,
> Adora
>
> QUESTIONS:
>
> 1) It looks like BP is running out of dispersants, is that true? [Coast
> Guard] DRAFT answer: NO
>
> 2) Have dispersants ever been used on this large of a scale before?
> [EPA / NOAA] DRAFT answer: NO
>
> 3) What are the effects on marine life? [DOI]
>
> 4) Will the effects of marine life ever be known? [EPA / DOI] DRAFT: The
> authorization given to BP to use the dispersant on oil present on the
> surface of the water included specific conditions to ensure the
> protection of the environment and the health of residents in affected
> areas. We will continue to monitor for the effects of this dispersant on
> the environment and we reserve the right to discontinue the its use.
>
> 5) The National Research Council wrote a paper in 2005 recommending
> joint research between feds and industry. Did the federal government
> actually do that? [EPA DRAFTING] Note: short answer is yes.
>
> 6) How does the dispersant work? [Does anyone have this info mocked up
> already?]
>
> 7) Corexit is the type of dispersant being used. BP says they're using 2
> different types. What's the difference? [EPA] DRAFT: One is water

> soluble, one is oil soluble. For more information, please contact the
> product manufacturer. (Looking to see if there's more we can say
> without compromising CBI)
>
> 8) Can someone speak to the ingredients and any concerns about it?
> DRAFT: This is considered Confidential Business Information. For more
> information, please contact the manufacturer.
>
> 9) How much dispersant has been released so far into the water? [COAST
> GUARD? NOAA?] Note: Is this something that is posted daily on a website
> where we can direct reporters? That would be very helpful
>
> 10) Have we been able to make an assessment on the effects of the
> dispersant on the environment? [EPA DRAFTING]
>
> 11) What kind of positive/negative effects are we seeing from the
> dispersant? [EPA DRAFTING] Note: We'll say something about BP providing
> results of testing and that we'll continue to be aggressive in
> monitoring and testing as it is used.
>
> 12) What are the future plans for dispersants? Are we looking to
> continue using them heavily?
> Surface use:
> The authorization given to BP to use the dispersant on oil present on
> the surface of the water included specific conditions to ensure the
> protection of the environment and the health of residents in affected
> areas. At this time, BP is authorized to continue use of this dispersant
> on the surface of the water. We will continue to monitor for the effects
> of this dispersant on the environment and we reserve the right to
> discontinue the its use.
>
> Underwater use:
> The Coast Guard and EPA authorized BP to conduct tests of a new approach
> to use this dispersant underwater, at the source of the leak. The tests
> were done to determine if the dispersant would be effective in breaking
> up the oil and helping to control the leaks. No further use of
> dispersants underwater is planned until BP provides the results of these
> tests for our
>

Received(Date): Sat, 08 May 2010 09:52:49 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Re: TODAY'S GOV CALL - TALKING POINTS
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: Linda Belton <Linda.Belton@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Monica, I don't think we have fact sheets on these specific issues yet, so we'll work on talking points on this subject for tomorrow.

Linda, it might be helpful to circulate the attached fact sheet on seafood safety as general background.

Jainey

Monica Medina wrote:

> We got a second action item late in the call. Jindal wants to know what we know about the long term impacts on fisheries for this volume of dispersants and the emulsified moose stuff – how long will that persist and what is the impact of it on fisheries. Barbour asked a similar question because they are seeing lots of oil just under the surface (12-18 in) and wonder how this impacts fisheries. We might want to make our fact sheets available to the govs. We could send them to the govs offices.
>
> **From:** Linda Belton [mailto:linda.belton@noaa.gov]
> **Sent:** Saturday, May 08, 2010 9:27 AM
> **To:** 'Jainey.Bavishi@noaa.gov'; 'Monica.Medina@noaa.gov'; 'dwh.staff@noaa.gov'
> **Subject:** Re: TODAY'S GOV CALL - TALKING POINTS
>
> Please send me the names of NOAA- SSCs in the region- will send to Governors and WH IGA

> **From**: Jainey.Bavishi <Jainey.Bavishi@noaa.gov>
> **To**: Monica.Medina@noaa.gov <Monica.Medina@noaa.gov>; Linda belton <Linda.Belton@noaa.gov>; 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
> **Sent**: Sat May 08 08:41:17 2010
> **Subject**: TODAY'S GOV CALL - TALKING POINTS
>
> Monica,
>
> Below and attached are talking points for today's call with the Governors.
>
> Jainey
>
> **Talking Points for Governors Call**

Trajectory Status:

Oil continues to spread off the coast of Louisiana but little has come ashore.

The primary slick is centered near the leaking well, but lobes extend both west and east.

Trajectories show a general westward movement of the oil, but NOAA is carefully watching the eastern and southern edges of the slick.

Weather tomorrow will continue to be favorable for response operations. The winds will shift over the weekend to NE 15-20 kts until Monday when the winds will shift from back to a SE pattern and continue through next week.

The potential that this slick may be picked up by the Loop Current continues to be a growing topic of concern for stakeholders in the Gulf and SE region. For the next several days, NOAA does not expect the oil to move into the Loop Current but will continue to monitor the current's location.

Yesterday, a large shallow subsurface feature was reported offshore of Timbalier Bay, to the west of Mississippi River Delta. Based on close examination of aerial photographs, we believe some of this material is algae. Algal blooms are common this time of year and may be mistaken as oil by aerial observers. Boat-based sampling is on-going to evaluate further.

NOAA's trajectory information can now be found on google.com/crisisresponse/oilspill. We are working with the Joint Information Center to keep this information as current as possible.

Loop Current (IF ASKED):

· As part of a comprehensive government response to this incident, we need to look at different scenarios, especially since it is unknown how long this release will continue.

· NOAA is closely monitoring the oil slick's proximity to the Loop Current in the Gulf of Mexico.

· To date, no oil has been observed in the Loop Current and currently the closest patch is 70-90 miles away.

· NOAA continues to develop short-term oil spill trajectory forecasts twice a day to predict where the oil may go for the next three days. Oil is not expected to move into the Loop Current during our three day forecast period.

· If oil was to reach the Loop Current, oil could reach the Florida Straits within 10 to 15 days. During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent.

· NOAA is engaging experts within and outside government to develop long-term oil movement forecasts for a worst case scenario. Predicting where the oil may go if the release continues, allows for adequate response measures and resources to be placed in appropriate locations.

· NOAA is also closely monitoring the surface area, speed, and depth of the loop current, which is constantly variable.

Fisheries Closures:

· In connection with trajectory assessments, NOAA will continue to evaluate the status of the fisheries closure daily in response to where oil is, has been, and is projected to move.

Whale Mortality:

· A dead whale was found off of Cat Island in Mississippi. Investigation is underway to determine the cause of death.

NOAA Role in Placing Boom:

· NOAA has employed a boom expert to work in the region to provide advice on the environmental impacts of boom.

· The Coast Guard directs the actual placement and deployment of boom.



Document ID: 0.7.19.590

Your Global Inspection Solution

NOAA FISHERIES SERVICE



1315 East West Highway
Silver Spring, MD 20910
Phone: 301-713-2355
Fax: 301-713-1081
Toll free: 800-422-2750
NMFS.Seafood.Services@noaa.gov
www.seafood.nmfs.noaa.gov

Impact of Crude Oil on Seafood

Crude oil has the potential to taint seafood with flavors and odors imparted by exposure to hydrocarbon chemicals. The U.S. Food and Drug Administration regulates the presence of hydrocarbons as a possible adulterant in seafood.

The public should not be concerned about the safety of seafood they are buying at this time. The spill has not reached the coastal area and the seafood on the market has not been affected. The Federal and State governments have strong systems in place to test and monitor seafood safety and to prohibit harvesting from affected areas, keeping oiled products out of the market.

NOAA Fisheries is working closely with the U.S. Food and Drug Administration and the States to ensure seafood safety. If managers determine that seafood may be affected, the next step is to assess whether seafood is tainted or contaminated to levels that could pose a risk to human health through consumption. NOAA conducts a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe following an oil spill. The results will be made pubic as soon as possible.

Seafood Inspection Program

The NOAA Seafood Inspection Program has often been called upon to perform screening and training tasks following major oil spills such as the 1989 Exxon Valdez spill in Alaska; 1996 spill in Rhode Island; 1999 spill in Coos Bay, Oregon; and, several spills in San Francisco including the most recent in 2007. Program experts perform sensory analysis to detect oil contamination. The results are compared with the results of chemical analysis conducted by NOAA's National Seafood Inspection Laboratory in Mississippi or its Science Centers.

In response to the current oil spill, the program is beginning to implement a plan of operation to assist both industry and government to determine the extent of contamination in seafood. The program can mobilize staff to train State inspection personnel and industry on sensory analysis techniques to expand the detection capabilities. Depending upon the scope of the problem, it is often best to train a base of State or local industry personnel in the affected area rather than continue to have Federal inspectors perform the routine analysis.

Document ID: 0.7.19.590.1

Your Global Inspection Solution

The mission of the NOAA Seafood Inspection Program is to ensure the safety and quality as well as enhance the marketability and sustainability of seafood products for the benefit of the American consumer by providing science based inspection services to the seafood industry. The program is voluntary and fee-for-service to provide professional inspection services to ensure compliance with food safety and quality regulations. It is the only Federal program with authority to bestow the U.S. "Grade A" mark for eligible products that meet exceptional quality standards.



Inspection Offices

The NOAA Seafood Inspection Program can assist with all seafood inspection needs. Contact one of our regional offices about services in your area.

HEADQUARTERS
SILVER SPRING, MD

NORTHEAST INSPECTION BRANCH
Gloucester, MA

WESTERN INSPECTION BRANCH
Seattle, WA

SOUTHEAST INSPECTION BRANCH
St. Petersburg, FL

Seafood Inspection Program
NOAA Fisheries
U.S. Department of Commerce
1315 East West Highway, F/SI
Silver Spring, MD 20910
Website: www.seafood.nmfs.noaa.gov

Received(Date): Sat, 08 May 2010 10:02:55 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: TODAY'S GOV CALL - TALKING POINTS
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: Linda Belton <Linda.Belton@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Q&A's for dispersant's are currently being developed. This is a joint effort by EPA, USCG, DOI and NOAA. These will then be send to OMB and JIC for clearance.

Monica Medina wrote:

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> **Sent:** Saturday, May 08, 2010 9:27 AM
> **To:** 'Jainey.Bavishi@noaa.gov'; 'Monica.Medina@noaa.gov'; 'dwh.staff@noaa.gov'
> **Subject:** Re: TODAY'S GOV CALL - TALKING POINTS
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From: Jainey.Bavishi <Jainey.Bavishi@noaa.gov>
To: Monica.Medina@noaa.gov <Monica.Medina@noaa.gov>; Linda belton <Linda.Belton@noaa.gov>; 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
Sent: Sat May 08 08:41:17 2010
Subject: TODAY'S GOV CALL - TALKING POINTS

Monica,

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Jainey

Talking Points for Governors Call

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· NOAA is closely monitoring the oil slick's proximity to the Loop Current in the Gulf of Mexico.

· To date, no oil has been observed in the Loop Current and currently the closest patch is 70-90 miles away.

· NOAA continues to develop short-term oil spill trajectory forecasts twice a day to predict where the oil may go for the next three days. Oil is not expected to move into the Loop Current during our three day forecast period.

· If oil was to reach the Loop Current, oil could reach the Florida Straits within

10 to 15 days. During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent.

· NOAA is engaging experts within and outside government to develop long-term oil movement forecasts for a worst case scenario. Predicting where the oil may go if the release continues, allows for adequate response measures and resources to be placed in appropriate locations.

· NOAA is also closely monitoring the surface area, speed, and depth of the loop current, which is constantly variable.

Fisheries Closures:

· In connection with trajectory assessments, NOAA will continue to evaluate the status of the fisheries closure daily in response to where oil is, has been, and is projected to move.

Whale Mortality:

· A dead whale was found off of Cat Island in Mississippi. Investigation is underway to determine the cause of death.

NOAA Role in Placing Boom:

· NOAA has employed a boom expert to work in the region to provide advice on the environmental impacts of boom.

· The Coast Guard directs the actual placement and deployment of boom.

Received(Date): Sat, 08 May 2010 11:07:52 -0400
From: John Oliver <John.Oliver@noaa.gov>
Subject: Re: ACTION: Impact of Dispersants on Fisheries
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>,Christopher Meaney <Christopher.Meaney@noaa.gov>,Eric Schwaab <Eric.Schwaab@noaa.gov>, Samuel Rauch <Samuel.Rauch@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>,Michael S Gallagher <Michael.S.Gallagher@noaa.gov>

Steve -- will you respond (all) to Jainey. Thanks jo

Jainey.Bavishi wrote:

> John and John,
>
> On the call with the governors this morning, Gov. Jindal and Gov. Barbour asked for more information on the impact of dispersants on fisheries, especially given the high volume of dispersants that are being used. Governor Barbour asked a similar question about the impact of oil under the surface (12 - 18 inches) on fisheries. I know that there is work going on to examine the impact of dispersants on fisheries, but is there anything we can say now about what we know or what kind of evaluation is happening? We will want to be able to be responsive about these issues on tomorrow's 9:15 am call, so your insight to create a few talking points would be very helpful.
>
> Thanks,
> Jainey

Received(Date): Sat, 08 May 2010 11:33:23 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: NRT Meeting Notes, May 8, 2010, 11 AM
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>

Below are notes from the May 8, 11 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 8, 2010
11:00 AM

The next NRT meeting is May 9 at 11 AM.

Operational Status Situation:
-7 in situ burns were conducted yesterday. 5 were successful. 9,000 barrels of oil were burned.
-7,000 gallons of dispersants were applied.
-17,000 gallons of oily water mixture was collected.
-Still awaiting results from subsurface dispersant injection testing.
-During the last 2 days, more oil has been taken out of the water than discharged.
-There has been a hydrate build up at the sea floor under the coffer dam, which is making the coffer dam completely buoyant and hard to control. Currently, ethanol is being pumped in to address the issue, but it is not clear whether this will work.
-Coast Guard is working on a paper evaluating the risks posed around the country with emergency supplies being sent to Gulf.
-Coast Guard is also working on issues with competing demands for boom in the supply chain from federal, state and local governments and private sector. By the end of the day, there will be transparency around what is in the Gulf, what is deployed and the amount on order.

Communications:
-Governor Riley is dissatisfied with boom plan and could make some news over the weekend.
-We will need third party validators to say that everything that can be tried to stop the release is being tried --- especially important as we sequence very visible and public strategies such as coffer dam. Must manage expectations.

Legal Affairs:
-OMB circulated draft legislation. Lawyers are conducting summary and analysis by 5 pm today.
-Two Coast Guard lawyers will be on call with the NIC to deal with legal issues 24/7.
-We need to document any instances where BP is not cooperating.

Intergovernmental Affairs:
-Governors are mostly concerned about boom.

-We need to be closely aligned on the success of the containment dome today.
-We will have a fact sheet on claims that is broken out by state.
-We will also have a fact sheet on what's in the water, what's going to be in the water, and how much more is needed by state.
-IGA outreach report is going to the NIC daily.
-DOL is working with Vietnamese community.

Congressional:
-2 CODELs came through this week and overflights were provided.
-3 pm Hill call will be held today and Sunday.
-Adm. Allen met with Rep. Miller and Bonner on incident management plan.

Received(Date): Sat, 08 May 2010 13:37:44 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: EPA dispersants TPs
To: Jainey Bavishi <Jainey.Bavishi@noaa.gov>
Cc: "'Jennifer.Austin@noaa.gov'" <Jennifer.Austin@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,"'Justin.kenney@noaa.gov'" <Justin.kenney@noaa.gov>,"'Christopher.Vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>

I'll have input by this afternoon.

Jainey Bavishi wrote:
> Shannon from DOC OPA said that we need to get all NOAA input in this afternoon. She didn't give me a time though.
>
> ----- Original Message -----
> From: Jennifer Austin <Jennifer.Austin@noaa.gov>
> To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
> Cc: Justin kenney <Justin.kenney@noaa.gov>; Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>
> Sent: Sat May 08 11:54:58 2010
> Subject: EPA dispersants TPs
>
> Hi David,
>
> As Chris noted yesterday, EPA is wanting input on the dispersants Q&A
> over the weekend, probably sooner rather than later, can you just keep
> us posted please on the timeline you have going for getting that worked
> up? Their goal is to clear it and be able to get it to reporters
> Monday, and we've all seen this clearance process, so I expect they'll
> be pushing for it by the end of today, or definitely early tomorrow.
> Let me know what we can reasonably expect in terms of turn around from
> NOAA so we can keep them informed.
>
> Thanks, Jen
>
> --
> Jennifer Austin
> NOAA Communications & External Affairs
> 202-302-9047
> www.noaa.gov
> www.climate.gov
> www.facebook.com/noaa.lubchenco
>
>

Received(Date): Sat, 08 May 2010 16:22:37 -0400
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Subject: Re: **UPDATE** DISPERSANT Q & A
To: David Holst <David.Holst@noaa.gov>
Cc: Justin Kenney <Justin.kenney@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,"'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

Thanks Dave, who has reviewed this? and who else needs to sign off
before we send outside NOAA?

David Holst wrote:
> All, here are the responses to the dispersant questions.
>
> Dave
>
>
> Jennifer Austin wrote:
>> Justin,
>> David holst has the lead, is working on getting something together by
>> end of today.
>> Copying dhw.staff
>> Jennifer Austin, NOAA Communications, 2023029047
>>
>> ----------
>> *From*: Justin Kenney
>> *To*: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>;
>> 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
>> *Cc*: Jennifer Austin; 'christopher.vaccaro@noaa.gov'
>> <christopher.vaccaro@noaa.gov>
>> *Sent*: Sat May 08 13:56:26 2010
>> *Subject*: Fw: **UPDATE** DISPERSANT Q & A
>>
>> Hello. Seeking guidance on best to process this request within NOAA.
>>
>> Thx
>>
>>
>>
>> Justin Kenney
>> NOAA Director of Communications
>> and External Affairs
>> Office: 202-482-6090
>> Cell: 202-821-6310
>> Facebook: www.facebook.com/noaa.lubchenco
>> (Sent from my BlackBerry)
>>
>> ----------
>> *From*: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
>> *To*: O'Neil, Christopher LCDR <christopher.t.o'neil@uscg.mil>;
>> Gilson, Shannon <SGilson@doc.gov>; Ronald A LaBrec
>> <Ronald.A.LaBrec@uscg.dhs.gov>; Nick Shapiro
>> <Nicholas_S._Shapiro@who.eop.gov>; Benjamin LaBolt
>> <Benjamin_LaBolt@who.eop.gov>; Matt_lee-ashley
>> <Matt_lee-ashley@ios.doi.gov>; kendra_barkoff
>> <kendra_barkoff@ios.doi.gov>; David Gray <gray.david@epa.gov>;

>> Perry.Dale@epamail.epa.gov <Perry.Dale@epamail.epa.gov>
>> *Cc*: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
>> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>;
>> Vaccaro, Christopher <Christopher.Vaccaro@noaa.gov>;
>> justin.kenney@noaa.gov <justin.kenney@noaa.gov>
>> *Sent*: Sat May 08 13:19:36 2010
>> *Subject*: **UPDATE** DISPERSANT Q & A
>>
>> Hey Guys,
>> Ron @ JIC is eager to hold a technical background press briefing on
>> dispersants either tomorrow or Monday. Whatever the case, it's very
>> important that we finish this q&a today and get it through the OMB
>> process.
>> I've looped Justin from NOAA and David and Dale from EPA.
>> Let me know if you have any questions or suggestions.
>> Thanks,
>> Adora
>>
>> ----------
>>
>> * From: *"O'Neil, Christopher LCDR" [christopher.t.o'neil@uscg.mil]
>> * Sent: *05/07/2010 08:45 PM AST
>> * To: *Adora Andy; "Gilson, Shannon" <SGilson@doc.gov>;
>> <Ronald.A.LaBrec@uscg.dhs.gov>; "Nick Shapiro"
>> <Nicholas_S._Shapiro@who.eop.gov>; "Benjamin LaBolt"
>> <Benjamin_LaBolt@who.eop.gov>; "Matt_lee-ashley"
>> <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff"
>> <kendra_barkoff@ios.doi.gov>
>> * Cc: *Seth Oster; Alisha Johnson; "Vaccaro, Christopher"
>> <Christopher.Vaccaro@noaa.gov>
>> * Subject: *RE: ACTION: DISPERSANT Q & A
>>
>>
>> Ill send around the horn early sat morn
>>
>> Sent with Good (www.good.com)
>>
>>
>> -----Original Message-----
>> From: Andy.Adora@epamail.epa.gov [mailto:Andy.Adora@epamail.epa.gov]
>> Sent: Friday, May 07, 2010 05:56 PM Eastern Standard Time
>> To: Gilson, Shannon; 'Ronald.A.LaBrec@uscg.dhs.gov'; Nick
>> Shapiro; Benjamin LaBolt; Matt_lee-ashley; kendra_barkoff; O'Neil,
>> Christopher LCDR
>> Cc: Oster.Seth@epamail.epa.gov; Johnson.Alisha@epamail.epa.gov;
>> Vaccaro, Christopher
>> Subject: Re: ACTION: DISPERSANT Q & A
>>
>> Adding Coast Guard Chris. EPA will work on this over the weekend.
>> Been putting reporters off for a while so we really need this by Monday.
>> Thanks!
>>
>>
>> ----- Original Message -----
>> From: "Gilson, Shannon" [SGilson@doc.gov]
>> Sent: 05/07/2010 04:37 PM AST
>> To: Adora Andy; "'Ronald.A.LaBrec@uscg.dhs.gov'"
>> <Ronald.A.LaBrec@uscg.dhs.gov>; "'Nicholas_S._Shapiro@who.eop.gov'"

>> <Nicholas_S._Shapiro@who.eop.gov>; "'Benjamin_LaBolt@who.eop.gov'"
>> <Benjamin_LaBolt@who.eop.gov>; "'Matt_Lee-Ashley@ios.doi.gov'"
>> <Matt_Lee-Ashley@ios.doi.gov>; "'Kendra_Barkoff@ios.doi.gov'"
>> <Kendra_Barkoff@ios.doi.gov>
>> Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher"
>> <Christopher.Vaccaro@noaa.gov>
>> Subject: Re: ACTION: DISPERSANT Q & A
>>
>>
>>
>> Adding in Chris.
>>
>> ----- Original Message -----
>> From: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
>> To: LaBrec, Ronald CAPT <Ronald.A.LaBrec@uscg.dhs.gov>; Shapiro,
>> Nicholas S. <Nicholas_S._Shapiro@who.eop.gov>; LaBolt, Benjamin
>> <Benjamin_LaBolt@who.eop.gov>; Matt_Lee-Ashley@ios.doi.gov
>> <Matt_Lee-Ashley@ios.doi.gov>; Kendra_Barkoff@ios.doi.gov
>> <Kendra_Barkoff@ios.doi.gov>; Gilson, Shannon
>> Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
>> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>
>> Sent: Fri May 07 16:34:10 2010
>> Subject: ACTION: DISPERSANT Q & A
>>
>>
>> Hey folks,
>> Below are the questions we're getting on dispersants. Many of these
>> questions should be answered by the Coast Guard, DOI, DOC, EPA or even
>> BP, but we think it would be best to get one set of agreed upon answers
>> so that we can all operate from the same script, rather than send
>> reporters back and forth.
>> Below are some draft answers and suggestions for which agency may have
>> the correct answer. Let's get this initial group to draft and sign off
>> on answers and then I'll get OMB sign off.
>> Let me know if you have something to change/add to a draft answer, etc.
>> This is a free exchange of ideas here... nothing set in stone.
>> Thanks,
>> Adora
>>
>> QUESTIONS:
>>
>> 1) It looks like BP is running out of dispersants, is that true? [Coast
>> Guard] DRAFT answer: NO
>>
>> 2) Have dispersants ever been used on this large of a scale before?
>> [EPA / NOAA] DRAFT answer: NO
>>
>> 3) What are the effects on marine life? [DOI]
>>
>> 4) Will the effects of marine life ever be known? [EPA / DOI] DRAFT: The
>> authorization given to BP to use the dispersant on oil present on the
>> surface of the water included specific conditions to ensure the
>> protection of the environment and the health of residents in affected
>> areas. We will continue to monitor for the effects of this dispersant on
>> the environment and we reserve the right to discontinue the its use.
>>
>> 5) The National Research Council wrote a paper in 2005 recommending
>> joint research between feds and industry. Did the federal government

>> actually do that? [EPA DRAFTING] Note: short answer is yes.
>>
>> 6) How does the dispersant work? [Does anyone have this info mocked up
>> already?]
>>
>> 7) Corexit is the type of dispersant being used. BP says they're using 2
>> different types. What's the difference? [EPA] DRAFT: One is water
>> soluble, one is oil soluble. For more information, please contact the
>> product manufacturer. (Looking to see if there's more we can say
>> without compromising CBI)
>>
>> 8) Can someone speak to the ingredients and any concerns about it?
>> DRAFT: This is considered Confidential Business Information. For more
>> information, please contact the manufacturer.
>>
>> 9) How much dispersant has been released so far into the water? [COAST
>> GUARD? NOAA?] Note: Is this something that is posted daily on a website
>> where we can direct reporters? That would be very helpful
>>
>> 10) Have we been able to make an assessment on the effects of the
>> dispersant on the environment? [EPA DRAFTING]
>>
>> 11) What kind of positive/negative effects are we seeing from the
>> dispersant? [EPA DRAFTING] Note: We'll say something about BP providing
>> results of testing and that we'll continue to be aggressive in
>> monitoring and testing as it is used.
>>
>> 12) What are the future plans for dispersants? Are we looking to
>> continue using them heavily?
>> Surface use:
>> The authorization given to BP to use the dispersant on oil present on
>> the surface of the water included specific conditions to ensure the
>> protection of the environment and the health of residents in affected
>> areas. At this time, BP is authorized to continue use of this dispersant
>> on the surface of the water. We will continue to monitor for the effects
>> of this dispersant on the environment and we reserve the right to
>> discontinue the its use.
>>
>> Underwater use:
>> The Coast Guard and EPA authorized BP to conduct tests of a new approach
>> to use this dispersant underwater, at the source of the leak. The tests
>> were done to determine if the dispersant would be effective in breaking
>> up the oil and helping to control the leaks. No further use of
>> dispersants underwater is planned until BP provides the results of these
>> tests for our
>>
>>
>> ###
>>
>>
>> Adora Andy
>> Press Secretary
>> U.S. Environmental Protection Agency
>> Office of Public Affairs
>> 202-564-2715
>> andy.adora@epa.gov
>>
>>

>

--
Jennifer Austin
NOAA Communications & External Affairs
202-302-9047
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www.climate.gov
www.facebook.com/noaa.lubchenco

Received(Date): Sat, 08 May 2010 16:39:42 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Re: **UPDATE** DISPERSANT Q & A
To: David Holst <David.Holst@noaa.gov>
Cc: Jennifer Austin <Jennifer.Austin@noaa.gov>,Justin Kenney <Justin.kenney@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,"'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

In general these appear to be pretty factual and might not need a higher policy review. However, I would ask that folks on this email review #10 for messaging purposes.

Agreed?
Thanks

we will have a process in place on Monday for internal review of documents.

David Holst wrote:

> All, here are the responses to the dispersant questions.
>
> Dave
>
> Jennifer Austin wrote:
>
> > Justin,
> > David holst has the lead, is working on getting something together by end of today.
> > Copying dhw.staff
> > Jennifer Austin, NOAA Communications, 2023029047

From: Justin Kenney
To: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
Cc: Jennifer Austin; 'christopher.vaccaro@noaa.gov' <christopher.vaccaro@noaa.gov>
Sent: Sat May 08 13:56:26 2010
Subject: Fw: **UPDATE** DISPERSANT Q & A

Hello. Seeking guidance on best to process this request within NOAA.

Thx

Justin Kenney
NOAA Director of Communications

and External Affairs
Office: 202-482-6090
Cell: 202-821-6310
Facebook: www.facebook.com/noaa.lubchenco
(Sent from my BlackBerry)

From: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
To: O'Neil, Christopher LCDR <christopher.t.o'neil@uscg.mil>; Gilson, Shannon <SGilson@doc.gov>; Ronald A LaBrec <Ronald.A.LaBrec@uscg.dhs.gov>; Nick Shapiro <Nicholas_S._Shapiro@who.eop.gov>; Benjamin LaBolt <Benjamin_LaBolt@who.eop.gov>; Matt_lee-ashley <Matt_lee-ashley@ios.doi.gov>; kendra_barkoff <kendra_barkoff@ios.doi.gov>; David Gray <gray.david@epa.gov>; Perry.Dale@epamail.epa.gov <Perry.Dale@epamail.epa.gov>
Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>; Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>; Vaccaro, Christopher <Christopher.Vaccaro@noaa.gov>; justin.kenney@noaa.gov <justin.kenney@noaa.gov>
Sent: Sat May 08 13:19:36 2010
Subject: **UPDATE** DISPERSANT Q & A

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To: Adora Andy; "Gilson, Shannon" <SGilson@doc.gov>; <Ronald.A.LaBrec@uscg.dhs.gov>; "Nick Shapiro" <Nicholas_S._Shapiro@who.eop.gov>; "Benjamin LaBolt" <Benjamin_LaBolt@who.eop.gov>; "Matt_lee-ashley" <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff" <kendra_barkoff@ios.doi.gov>
Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher" <Christopher.Vaccaro@noaa.gov>
Subject: RE: ACTION: DISPERSANT Q & A

Ill send around the horn early sat morn

Sent with Good (www.good.com)

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Benjamin LaBolt; Matt_lee-ashley; kendra_barkoff; O'Neil, Christopher LCDR
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Sent: Fri May 07 16:34:10 2010
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Underwater use:
The Coast Guard and EPA authorized BP to conduct tests of a new approach to use this dispersant underwater, at the source of the leak. The tests were done to determine if the dispersant would be effective in breaking up the oil and helping to control the leaks. No further use of

dispersants underwater is planned until BP provides the results of these tests for our

###

Adora Andy
Press Secretary
U.S. Environmental Protection Agency
Office of Public Affairs
202-564-2715
andy.adora@epa.gov

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Sat, 08 May 2010 17:46:26 -0400
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Subject: Re: **UPDATE** DISPERSANT Q & A
To: David Holst <David.Holst@noaa.gov>
Cc: Justin Kenney <Justin.kenney@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,"'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

All, FYI, I just got this, as DOI's proposed response to #3, and they say they are comfortable with the response that was initially provided for #4.

sounds like they are anxious to use this as soon as tomorrow for a potential briefing, so I don't think we, NOAA will necessarily get another look at these before they are in use.

From DOI:

3) *What are the effects on marine life?*

3) We are continuing to study its potential impacts on marine life, including in the deep sea, but we do know that when used in open sea areas with close oversight, dispersants can reduce the overall risk that oil spills pose to marine life by breaking up the oil and allowing it to disperse into the water column, where bacteria can break it down more quickly.

David Holst wrote:
> All, here are the responses to the dispersant questions.
>
> Dave
>
>
> Jennifer Austin wrote:
>> Justin,
>> David holst has the lead, is working on getting something together by
>> end of today.
>> Copying dhw.staff
>> Jennifer Austin, NOAA Communications, 2023029047
>>
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>> 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
>> *Cc*: Jennifer Austin; 'christopher.vaccaro@noaa.gov'
>> <christopher.vaccaro@noaa.gov>
>> *Sent*: Sat May 08 13:56:26 2010
>> *Subject*: Fw: **UPDATE** DISPERSANT Q & A
>>
>> Hello. Seeking guidance on best to process this request within NOAA.
>>
>> Thx
>>
>>

>>
>> Justin Kenney
>> NOAA Director of Communications
>> and External Affairs
>> Office: 202-482-6090
>> Cell: 202-821-6310
>> Facebook: www.facebook.com/noaa.lubchenco
>> (Sent from my BlackBerry)
>>
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>> *From*: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
>> *To*: O'Neil, Christopher LCDR <christopher.t.o'neil@uscg.mil>;
>> Gilson, Shannon <SGilson@doc.gov>; Ronald A LaBrec
>> <Ronald.A.LaBrec@uscg.dhs.gov>; Nick Shapiro
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>> <kendra_barkoff@ios.doi.gov>; David Gray <gray.david@epa.gov>;
>> Perry.Dale@epamail.epa.gov <Perry.Dale@epamail.epa.gov>
>> *Cc*: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
>> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>;
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>> *Sent*: Sat May 08 13:19:36 2010
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>> I've looped Justin from NOAA and David and Dale from EPA.
>> Let me know if you have any questions or suggestions.
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>> <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff"
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>> * Cc: *Seth Oster; Alisha Johnson; "Vaccaro, Christopher"
>> <Christopher.Vaccaro@noaa.gov>
>> * Subject: *RE: ACTION: DISPERSANT Q & A
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>> Ill send around the horn early sat morn
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>> Sent with Good (www.good.com)
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>> From: Andy.Adora@epamail.epa.gov [mailto:Andy.Adora@epamail.epa.gov]

>> Sent: Friday, May 07, 2010 05:56 PM Eastern Standard Time
>> To: Gilson, Shannon; 'Ronald.A.LaBrec@uscg.dhs.gov'; Nick
>> Shapiro; Benjamin LaBolt; Matt_lee-ashley; kendra_barkoff; O'Neil,
>> Christopher LCDR
>> Cc: Oster.Seth@epamail.epa.gov; Johnson.Alisha@epamail.epa.gov;
>> Vaccaro, Christopher
>> Subject: Re: ACTION: DISPERSANT Q & A
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>> Adding Coast Guard Chris. EPA will work on this over the weekend.
>> Been putting reporters off for a while so we really need this by Monday.
>> Thanks!
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>> To: Adora Andy; "'Ronald.A.LaBrec@uscg.dhs.gov'"
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>> From: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
>> To: LaBrec, Ronald CAPT <Ronald.A.LaBrec@uscg.dhs.gov>; Shapiro,
>> Nicholas S. <Nicholas_S._Shapiro@who.eop.gov>; LaBolt, Benjamin
>> <Benjamin_LaBolt@who.eop.gov>; Matt_Lee-Ashley@ios.doi.gov
>> <Matt_Lee-Ashley@ios.doi.gov>; Kendra_Barkoff@ios.doi.gov
>> <Kendra_Barkoff@ios.doi.gov>; Gilson, Shannon
>> Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
>> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>
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>> Let me know if you have something to change/add to a draft answer, etc.
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>> Thanks,
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>> QUESTIONS:

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>> the environment and we reserve the right to discontinue the its use.
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>> 5) The National Research Council wrote a paper in 2005 recommending
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>>
>> 6) How does the dispersant work? [Does anyone have this info mocked up
>> already?]
>>
>> 7) Corexit is the type of dispersant being used. BP says they're using 2
>> different types. What's the difference? [EPA] DRAFT: One is water
>> soluble, one is oil soluble. For more information, please contact the
>> product manufacturer. (Looking to see if there's more we can say
>> without compromising CBI)
>>
>> 8) Can someone speak to the ingredients and any concerns about it?
>> DRAFT: This is considered Confidential Business Information. For more
>> information, please contact the manufacturer.
>>
>> 9) How much dispersant has been released so far into the water? [COAST
>> GUARD? NOAA?] Note: Is this something that is posted daily on a website
>> where we can direct reporters? That would be very helpful
>>
>> 10) Have we been able to make an assessment on the effects of the
>> dispersant on the environment? [EPA DRAFTING]
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>>
>>
>

--
Jennifer Austin
NOAA Communications & External Affairs
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www.climate.gov
www.facebook.com/noaa.lubchenco

Received(Date): Sat, 08 May 2010 15:21:35 -0700
From: Craig.R.O'Connor@noaa.gov
Subject: Re: [Fwd: Re: **UPDATE** DISPERSANT Q & A]
To: Jennifer Austin <Jennifer.Austin@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Justin Kenney <Justin.kenney@noaa.gov>

John/Jennifer - I think this is fine including what Jennifer suggests and doi's contribution. As a point for my edification - in the legal world it is awkward to say 10 to 100 times "less" than something - we would say 1/10 to 1/100 of something. Seems funny to say a multiple is less . . .just me. If it is right in your world that's cool.
Thanks for the chance to look over this. Craig
----- Original Message -----
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Date: Saturday, May 8, 2010 2:55 pm
Subject: Re: [Fwd: Re: **UPDATE** DISPERSANT Q & A]

> David, My comment on # 10 which Beth suggested we review, is that
> is
> conflates the topics of environmental effects of the dispersants
> themselves with environmental effects of dispersed oil clouds.
> our answer to #3 more clearly talks about the two as separate
> issues.
> Whereas in #10, it is a little bit long and unclear and it gets
> hard to
> keep track of which we are talking about. We seem to transition to
> talking more about dispersed oil and its' impacts, but not the
> impacts
> of the dispersant chemicals which I think is the question.
>
> Also re-sending for Craig's benefit, DOI's suggested response to #3
> From DOI:
>
> 3) *What are the effects on marine life?*
> 3) We are continuing to study its potential impacts on marine life,
> including in the deep sea, but we do know that when used in open
> sea
> areas with close oversight, dispersants can reduce the overall risk
> that
> oil spills pose to marine life by breaking up the oil and allowing
> it to
> disperse into the water column, where bacteria can break it down
> more
> quickly.
>
> John Rapp wrote:
> > Craig,
> >
> > Lois Schiffer put your name forward to provide the GCNR review of
> the
> > attached Q&A re: dispersant use. EPA would like to use the
> answers as
> > soon as tomorrow, so please comment ASAP.
> >
> > Thanks,
> > John

> >
> > -------- Original Message --------
> > Subject: Re: **UPDATE** DISPERSANT Q & A
> > Date: Sat, 08 May 2010 16:00:01 -0400
> > From: David Holst <David.Holst@noaa.gov>
> > To: Jennifer Austin <Jennifer.Austin@noaa.gov>
> > CC: Justin Kenney <Justin.kenney@noaa.gov>,
> > "'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,
> > "'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,
> > "'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,
> > "Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
> > References:
> > <888D35080D24854AB67E0FE7147601F3040F8239C0@Vmail51.noaa.nems>
> >
> >
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> > All, here are the responses to the dispersant questions.
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> > Jennifer Austin wrote:
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> >> Copying dhw.staff
> >> Jennifer Austin, NOAA Communications, 2023029047
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> >> *From*: Justin Kenney
> >> *To*: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>;
> >> 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
> >> *Cc*: Jennifer Austin; 'christopher.vaccaro@noaa.gov'
> >> <christopher.vaccaro@noaa.gov>
> >> *Sent*: Sat May 08 13:56:26 2010
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> >> andy.adora@epa.gov
> >>
> >>
> >
> >
>
> --
> Jennifer Austin
> NOAA Communications & External Affairs
> 202-302-9047
> www.noaa.gov
> www.climate.gov
> www.facebook.com/noaa.lubchenco
>
>

John/Jennifer - I think this is fine including what Jennifer suggests and doi's contribution. As a point for my edification - in the legal world it is awkward to say 10 to 100 times "less" than something - we would say 1/10 to 1/100 of something. Seems funny to say a multiple is less . . .just me. If it is right in your world that's cool.
Thanks for the chance to look over this. Craig
----- Original Message -----
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Date: Saturday, May 8, 2010 2:55 pm
Subject: Re: [Fwd: Re: **UPDATE** DISPERSANT Q & A]

> David, My comment on # 10 which Beth suggested we review, is that
> is
> conflates the topics of environmental effects of the dispersants
> themselves with environmental effects of dispersed oil clouds.
> our answer to #3 more clearly talks about the two as separate
> issues.
> Whereas in #10, it is a little bit long and unclear and it gets
> hard to
> keep track of which we are talking about. We seem to transition to
> talking more about dispersed oil and its' impacts, but not the
> impacts
> of the dispersant chemicals which I think is the question.
>
> Also re-sending for Craig's benefit, DOI's suggested response to #3
> From DOI:
>
> 3) *What are the effects on marine life?*
> 3) We are continuing to study its potential impacts on marine life,
> including in the deep sea, but we do know that when used in open
> sea
> areas with close oversight, dispersants can reduce the overall risk
> that
> oil spills pose to marine life by breaking up the oil and allowing
> it to
> disperse into the water column, where bacteria can break it down
> more
> quickly.
>
> John Rapp wrote:
> > Craig,
> >
> > Lois Schiffer put your name forward to provide the GCNR review of
> the
> > attached Q&A re: dispersant use. EPA would like to use the
> answers as
> > soon as tomorrow, so please comment ASAP.
> >
> > Thanks,
> > John
> >
> > -------- Original Message --------
> > Subject: Re: **UPDATE** DISPERSANT Q & A
> > Date: Sat, 08 May 2010 16:00:01 -0400
> > From: David Holst <David.Holst@noaa.gov>
> > To: Jennifer Austin <Jennifer.Austin@noaa.gov>
> > CC: Justin Kenney <Justin.kenney@noaa.gov>,
> > "'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,
> > "'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,

> > "'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,
> > "Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
> > References:
> > <888D35080D24854AB67E0FE7147601F3040F8239C0@Vmail51.noaa.nems>
> >
> >
> >
> > All, here are the responses to the dispersant questions.
> >
> > Dave
> >
> >
> > Jennifer Austin wrote:
> >> Justin,
> >> David holst has the lead, is working on getting something
> together by
> >> end of today.
> >> Copying dhw.staff
> >> Jennifer Austin, NOAA Communications, 2023029047
> >>
> >> ----------
> -------
> >> *From*: Justin Kenney
> >> *To*: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>;
> >> 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
> >> *Cc*: Jennifer Austin; 'christopher.vaccaro@noaa.gov'
> >> <christopher.vaccaro@noaa.gov>
> >> *Sent*: Sat May 08 13:56:26 2010
> >> *Subject*: Fw: **UPDATE** DISPERSANT Q & A
> >>
> >> Hello. Seeking guidance on best to process this request within
> NOAA.>>
> >> Thx
> >>
> >>
> >>
> >> Justin Kenney
> >> NOAA Director of Communications
> >> and External Affairs
> >> Office: 202-482-6090
> >> Cell: 202-821-6310
> >> Facebook: www.facebook.com/noaa.lubchenco
> >> (Sent from my BlackBerry)
> >>
> >> ----------
> -------
> >> *From*: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
> >> *To*: O'Neil, Christopher LCDR <christopher.t.o'neil@uscg.mil>;
> >> Gilson, Shannon <SGilson@doc.gov>; Ronald A LaBrec
> >> <Ronald.A.LaBrec@uscg.dhs.gov>; Nick Shapiro
> >> <Nicholas_S._Shapiro@who.eop.gov>; Benjamin LaBolt
> >> <Benjamin_LaBolt@who.eop.gov>; Matt_lee-ashley
> >> <Matt_lee-ashley@ios.doi.gov>; kendra_barkoff
> >> <kendra_barkoff@ios.doi.gov>; David Gray <gray.david@epa.gov>;
> >> Perry.Dale@epamail.epa.gov <Perry.Dale@epamail.epa.gov>
> >> *Cc*: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
> >> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>;
> >> Vaccaro, Christopher <Christopher.Vaccaro@noaa.gov>;

> >> justin.kenney@noaa.gov <justin.kenney@noaa.gov>
> >> *Sent*: Sat May 08 13:19:36 2010
> >> *Subject*: **UPDATE** DISPERSANT Q & A
> >>
> >> Hey Guys,
> >> Ron @ JIC is eager to hold a technical background press briefing
> on
> >> dispersants either tomorrow or Monday. Whatever the case, it's
> very
> >> important that we finish this q&a today and get it through the
> OMB
> >> process.
> >> I've looped Justin from NOAA and David and Dale from EPA.
> >> Let me know if you have any questions or suggestions.
> >> Thanks,
> >> Adora
> >>
> >> ----------
> -------
> >>
> >> * From: *"O'Neil, Christopher LCDR"
> [christopher.t.o'neil@uscg.mil]>> * Sent: *05/07/2010 08:45 PM AST
> >> * To: *Adora Andy; "Gilson, Shannon" <SGilson@doc.gov>;
> >> <Ronald.A.LaBrec@uscg.dhs.gov>; "Nick Shapiro"
> >> <Nicholas_S._Shapiro@who.eop.gov>; "Benjamin LaBolt"
> >> <Benjamin_LaBolt@who.eop.gov>; "Matt_lee-ashley"
> >> <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff"
> >> <kendra_barkoff@ios.doi.gov>
> >> * Cc: *Seth Oster; Alisha Johnson; "Vaccaro, Christopher"
> >> <Christopher.Vaccaro@noaa.gov>
> >> * Subject: *RE: ACTION: DISPERSANT Q & A
> >>
> >>
> >> Ill send around the horn early sat morn
> >>
> >> Sent with Good (www.good.com)
> >>
> >>
> >> -----Original Message-----
> >> From: Andy.Adora@epamail.epa.gov
> [mailto:Andy.Adora@epamail.epa.gov]>> Sent: Friday, May 07, 2010
> 05:56 PM Eastern Standard Time
> >> To: Gilson, Shannon; 'Ronald.A.LaBrec@uscg.dhs.gov'; Nick
> >> Shapiro; Benjamin LaBolt; Matt_lee-ashley; kendra_barkoff;
> O'Neil,
> >> Christopher LCDR
> >> Cc: Oster.Seth@epamail.epa.gov;
> Johnson.Alisha@epamail.epa.gov;
> >> Vaccaro, Christopher
> >> Subject: Re: ACTION: DISPERSANT Q & A
> >>
> >> Adding Coast Guard Chris. EPA will work on this over the
> weekend.
> >> Been putting reporters off for a while so we really need this by
> Monday.>> Thanks!
> >>
> >>
> >> ----- Original Message -----

> >> From: "Gilson, Shannon" [SGilson@doc.gov]
> >> Sent: 05/07/2010 04:37 PM AST
> >> To: Adora Andy; "'Ronald.A.LaBrec@uscg.dhs.gov'"
> >> <Ronald.A.LaBrec@uscg.dhs.gov>;
> "'Nicholas_S._Shapiro@who.eop.gov'"
> >> <Nicholas_S._Shapiro@who.eop.gov>;
> "'Benjamin_LaBolt@who.eop.gov'"
> >> <Benjamin_LaBolt@who.eop.gov>; "'Matt_Lee-Ashley@ios.doi.gov'"
> >> <Matt_Lee-Ashley@ios.doi.gov>; "'Kendra_Barkoff@ios.doi.gov'"
> >> <Kendra_Barkoff@ios.doi.gov>
> >> Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher"
> >> <Christopher.Vaccaro@noaa.gov>
> >> Subject: Re: ACTION: DISPERSANT Q & A
> >>
> >>
> >>
> >> Adding in Chris.
> >>
> >> ----- Original Message -----
> >> From: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
> >> To: LaBrec, Ronald CAPT <Ronald.A.LaBrec@uscg.dhs.gov>; Shapiro,
> >> Nicholas S. <Nicholas_S._Shapiro@who.eop.gov>; LaBolt, Benjamin
> >> <Benjamin_LaBolt@who.eop.gov>; Matt_Lee-Ashley@ios.doi.gov
> >> <Matt_Lee-Ashley@ios.doi.gov>; Kendra_Barkoff@ios.doi.gov
> >> <Kendra_Barkoff@ios.doi.gov>; Gilson, Shannon
> >> Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;
> >> Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>
> >> Sent: Fri May 07 16:34:10 2010
> >> Subject: ACTION: DISPERSANT Q & A
> >>
> >>
> >> Hey folks,
> >> Below are the questions we're getting on dispersants. Many of these
> >> questions should be answered by the Coast Guard, DOI, DOC, EPA
> or even
> >> BP, but we think it would be best to get one set of agreed upon
> answers>> so that we can all operate from the same script, rather
> than send
> >> reporters back and forth.
> >> Below are some draft answers and suggestions for which agency
> may have
> >> the correct answer. Let's get this initial group to draft and
> sign off
> >> on answers and then I'll get OMB sign off.
> >> Let me know if you have something to change/add to a draft
> answer, etc.
> >> This is a free exchange of ideas here... nothing set in stone.
> >> Thanks,
> >> Adora
> >>
> >> QUESTIONS:
> >>
> >> 1) It looks like BP is running out of dispersants, is that true?
> [Coast>> Guard] DRAFT answer: NO
> >>
> >> 2) Have dispersants ever been used on this large of a scale before?
> >> [EPA / NOAA] DRAFT answer: NO
> >>

> >> 3) What are the effects on marine life? [DOI]
> >>
> >> 4) Will the effects of marine life ever be known? [EPA / DOI]
> DRAFT: The
> >> authorization given to BP to use the dispersant on oil present
> on the
> >> surface of the water included specific conditions to ensure the
> >> protection of the environment and the health of residents in
> affected>> areas. We will continue to monitor for the effects of
> this dispersant on
> >> the environment and we reserve the right to discontinue the its
> use.>>
> >> 5) The National Research Council wrote a paper in 2005 recommending
> >> joint research between feds and industry. Did the federal
> government>> actually do that? [EPA DRAFTING] Note: short answer is
> yes.>>
> >> 6) How does the dispersant work? [Does anyone have this info
> mocked up
> >> already?]
> >>
> >> 7) Corexit is the type of dispersant being used. BP says they're
> using 2
> >> different types. What's the difference? [EPA] DRAFT: One is water
> >> soluble, one is oil soluble. For more information, please
> contact the
> >> product manufacturer. (Looking to see if there's more we can say
> >> without compromising CBI)
> >>
> >> 8) Can someone speak to the ingredients and any concerns about it?
> >> DRAFT: This is considered Confidential Business Information. For
> more>> information, please contact the manufacturer.
> >>
> >> 9) How much dispersant has been released so far into the water?
> [COAST>> GUARD? NOAA?] Note: Is this something that is posted daily
> on a website
> >> where we can direct reporters? That would be very helpful
> >>
> >> 10) Have we been able to make an assessment on the effects of the
> >> dispersant on the environment? [EPA DRAFTING]
> >>
> >> 11) What kind of positive/negative effects are we seeing from the
> >> dispersant? [EPA DRAFTING] Note: We'll say something about BP
> providing>> results of testing and that we'll continue to be
> aggressive in
> >> monitoring and testing as it is used.
> >>
> >> 12) What are the future plans for dispersants? Are we looking to
> >> continue using them heavily?
> >> Surface use:
> >> The authorization given to BP to use the dispersant on oil
> present on
> >> the surface of the water included specific conditions to ensure the
> >> protection of the environment and the health of residents in
> affected>> areas. At this time, BP is authorized to continue use of
> this dispersant
> >> on the surface of the water. We will continue to monitor for the
> effects>> of this dispersant on the environment and we reserve the
> right to

> >> discontinue the its use.
> >>
> >> Underwater use:
> >> The Coast Guard and EPA authorized BP to conduct tests of a new
> approach>> to use this dispersant underwater, at the source of the
> leak. The tests
> >> were done to determine if the dispersant would be effective in
> breaking>> up the oil and helping to control the leaks. No further
> use of
> >> dispersants underwater is planned until BP provides the results
> of these
> >> tests for our
> >>
> >>
> >> ###
> >>
> >>
> >> Adora Andy
> >> Press Secretary
> >> U.S. Environmental Protection Agency
> >> Office of Public Affairs
> >> 202-564-2715
> >> andy.adora@epa.gov
> >>
> >>
> >
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>
> --
> Jennifer Austin
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> 202-302-9047
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>
>

Received(Date): Sat, 08 May 2010 19:36:25 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: **UPDATE** DISPERSANT Q & A
To: Margaret Spring <Margaret.Spring@noaa.gov>
Cc: Justin Kenney <Justin.kenney@noaa.gov>,"'Beth.Dieveney@noaa.gov'" <Beth.Dieveney@noaa.gov>,"'jennifer.austin@noaa.gov'" <Jennifer.Austin@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>,"'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

All,

Scientists from OR&R's Emergency Response and Assessment and Restoration Division provided the answers to these questions. I will take your questions/issues back to them to edit the answers.

It is my understanding from a conversation with Jen that EPA is compiling the responses, but NOAA will request a final review.

Sally - you had mentioned having the NOAA science team review this. Is there anyone in particular you would like to review this?

Margaret - did you want Jane to review these?

Dave

Margaret Spring wrote:

> First Question: Is this consistent with what Jane has been saying or is comfortable saying? what NOAA science review has occurred Dave?
>
> Second Question – who is reconciling the various answers? I note DOI was tasked to answer the question on impacts on marine life (which is NOT who should be identified as the lead). I would like us to have NOAA final review and concurrence with the text. There seems to be almost no understanding of NOAA's role among this Press group.
>
> Comments:
>
> #1 – not responsive to the question. Also only BP knows if they are running out so assuming this is a BP and CG answer.
>
> #4 – only relates to NRD injury. Aren't there other questions beyond injury to trust resources? Especially with the potential volume? Seafood safety, health, long term reproductive impacts, bioaccumulation, etc? If those threats are possible or noted in the

literature we should acknowledge, while still acknowledging we don't know the answer and the risk evaluations will address that at every decision point. We certainly don't need to enumerate a litany of scary things but we want to be honest that we understand there are risks and we are looking at all the information we can get our hands on.

Similar comment on #10. Is this complete

From: Justin Kenney [mailto:justin.kenney@noaa.gov]
Sent: Saturday, May 08, 2010 4:45 PM
To: 'Beth.Dieveney@noaa.gov'; 'David.Holst@noaa.gov'
Cc: 'jennifer.austin@noaa.gov'; 'justin.kenney@noaa.gov'; 'margaret.spring@noaa.gov'; 'sally.yozell@noaa.gov'; 'christopher.vaccaro@noaa.gov'; 'dwh.staff@noaa.gov'
Subject: Re: **UPDATE** DISPERSANT Q & A

And Margaret and Sally, I would love to have you concurrence before moving forward with these comments.

Justin Kenney
NOAA Director of Communications
and External Affairs
Office: 202-482-6090
Cell: 202-821-6310
Facebook: www.facebook.com/noaa.lubchenco
(Sent from my BlackBerry)

From: Beth Dieveney <Beth.Dieveney@noaa.gov>
To: David Holst <David.Holst@noaa.gov>
Cc: Jennifer Austin <Jennifer.Austin@noaa.gov>; Justin Kenney <Justin.kenney@noaa.gov>; 'margaret.spring@noaa.gov' <Margaret.Spring@noaa.gov>; 'sally.yozell@noaa.gov' <Sally.Yozell@noaa.gov>; 'christopher.vaccaro@noaa.gov' <Christopher.Vaccaro@noaa.gov>; Deepwater NOAA Support (dwh.staff@noaa.gov) <dwh.staff@noaa.gov>
Sent: Sat May 08 16:39:42 2010
Subject: Re: **UPDATE** DISPERSANT Q & A

In general these appear to be pretty factual and might not need a higher policy review. However, I would ask that folks on this email review #10 for messaging purposes.

Agreed?

Thanks

we will have a process in place on Monday for internal review of documents.

David Holst wrote:

All, here are the responses to the dispersant questions.

Dave

Jennifer Austin wrote:

Justin,
David holst has the lead, is working on getting something together by end of today.
Copying dhw.staff
Jennifer Austin, NOAA Communications, 2023029047

From: Justin Kenney
To: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
Cc: Jennifer Austin; 'christopher.vaccaro@noaa.gov' <christopher.vaccaro@noaa.gov>
Sent: Sat May 08 13:56:26 2010
Subject: Fw: **UPDATE** DISPERSANT Q & A

Hello. Seeking guidance on best to process this request within NOAA.

Thx

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Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>;

Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>; Vaccaro, Christopher <Christopher.Vaccaro@noaa.gov>; justin.kenney@noaa.gov <justin.kenney@noaa.gov>
Sent: Sat May 08 13:19:36 2010
Subject: **UPDATE** DISPERSANT Q & A

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I've looped Justin from NOAA and David and Dale from EPA.
Let me know if you have any questions or suggestions.
Thanks,
Adora

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Sent: 05/07/2010 08:45 PM AST
To: Adora Andy; "Gilson, Shannon" <SGilson@doc.gov>; <Ronald.A.LaBrec@uscg.dhs.gov>; "Nick Shapiro" <Nicholas_S._Shapiro@who.eop.gov>; "Benjamin LaBolt" <Benjamin_LaBolt@who.eop.gov>; "Matt_lee-ashley" <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff" <kendra_barkoff@ios.doi.gov>
Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher" <Christopher.Vaccaro@noaa.gov>
Subject: RE: ACTION: DISPERSANT Q & A

Ill send around the horn early sat morn

Sent with Good (www.good.com)

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Cc: Oster.Seth@epamail.epa.gov; Johnson.Alisha@epamail.epa.gov; Vaccaro, Christopher
Subject: Re: ACTION: DISPERSANT Q & A

Adding Coast Guard Chris. EPA will work on this over the weekend. Been putting reporters off for a while so we really need this by Monday.
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To: LaBrec, Ronald CAPT <Ronald.A.LaBrec@uscg.dhs.gov>; Shapiro, Nicholas S. <Nicholas_S._Shapiro@who.eop.gov>; LaBolt, Benjamin <Benjamin_LaBolt@who.eop.gov>; Matt_Lee-Ashley@ios.doi.gov <Matt_Lee-Ashley@ios.doi.gov>; Kendra_Barkoff@ios.doi.gov <Kendra_Barkoff@ios.doi.gov>; Gilson, Shannon
Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>; Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>
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Thanks,
Adora

QUESTIONS:

1) It looks like BP is running out of dispersants, is that true? [Coast Guard] DRAFT answer: NO

2) Have dispersants ever been used on this large of a scale before? [EPA / NOAA] DRAFT answer: NO

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5) The National Research Council wrote a paper in 2005 recommending joint research between feds and industry. Did the federal government actually do that? [EPA DRAFTING] Note: short answer is yes.

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7) Corexit is the type of dispersant being used. BP says they're using 2 different types. What's the difference? [EPA] DRAFT: One is water soluble, one is oil soluble. For more information, please contact the product manufacturer. (Looking to see if there's more we can say without compromising CBI)

8) Can someone speak to the ingredients and any concerns about it?
DRAFT: This is considered Confidential Business Information. For more information, please contact the manufacturer.

9) How much dispersant has been released so far into the water? [COAST GUARD? NOAA?] Note: Is this something that is posted daily on a website where we can direct reporters? That would be very helpful

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###

Adora Andy
Press Secretary
U.S. Environmental Protection Agency
Office of Public Affairs
202-564-2715
andy.adora@epa.gov

-- Beth Dieveney NOAA Program Coordination Office Office of the Under Secretary 14th & Constitution Ave., NW, Room 5811 Washington, DC 20230 phone: 202-482-1281 cell: 240-328-4812 fax: 202-482-4116

Received(Date): Sat, 08 May 2010 20:10:24 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: [Fwd: RE: **UPDATE** DISPERSANT Q & A]
To: john rapp <John.Rapp@noaa.gov>

Thanks John. And as you may expect, I need something ASAP.

john rapp wrote:

> Ok. I'll have someone check it out.
>
> John

From: David Holst <david.holst@noaa.gov>
To: John Rapp <John.Rapp@noaa.gov>
Sent: Sat May 08 20:07:04 2010
Subject: [Fwd: RE: **UPDATE** DISPERSANT Q & A]

John,

Can you help me out with Margaret's issues on question #4. NRDA will look at acute and chronic impacts, such as bioacumulation and reproductive impacts. But how about the seafood safety. That is something OR&R is not familiar with.

Dave

-------- Original Message --------

Subject: RE: **UPDATE** DISPERSANT Q & A
Date: Sat, 08 May 2010 18:02:30 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
To: Justin Kenney <Justin.kenney@noaa.gov>, "'Beth.Dieveney@noaa.gov'" <Beth.Dieveney@noaa.gov>, "'David.Holst@noaa.gov'" <David.Holst@noaa.gov>
CC: 'jennifer.austin@noaa.gov' <Jennifer.Austin@noaa.gov>, 'margaret.spring@noaa.gov' <Margaret.Spring@noaa.gov>, 'sally.yozell@noaa.gov' <Sally.Yozell@noaa.gov>, 'christopher.vaccaro@noaa.gov' <Christopher.Vaccaro@noaa.gov>, 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
References: <05412E4A297654408CED5BC268341E6C07F8771B8A@vmail3.noaa.nems>

First Question: Is this consistent with what Jane has been saying or is comfortable saying? what NOAA science review has occurred Dave?

Second Question – who is reconciling the various answers? I note DOI was tasked to answer the question on impacts on marine life (which is NOT who should be identified as the lead). I would like us to have NOAA final review and concurrence with the text. There seems to be almost no understanding of NOAA's role among this Press group.

Comments:

#1 – not responsive to the question. Also only BP knows if they are running out so assuming this is a BP and CG answer.

#4 – only relates to NRD injury. Aren't there other questions beyond injury to trust resources? Especially with the potential volume? Seafood safety, health, long term reproductive impacts, bioaccumulation, etc? If those threats are possible or noted in the literature we should acknowledge, while still acknowledging we don't know the answer and the risk evaluations will address that at every decision point. We certainly don't need to enumerate a litany of scary things but we want to be honest that we understand there are risks and we are looking at all the information we can get our hands on.

Similar comment on #10. Is this complete

From: Justin Kenney [mailto:justin.kenney@noaa.gov]
Sent: Saturday, May 08, 2010 4:45 PM
To: 'Beth.Dieveney@noaa.gov'; 'David.Holst@noaa.gov'
Cc: 'jennifer.austin@noaa.gov'; 'justin.kenney@noaa.gov'; 'margaret.spring@noaa.gov'; 'sally.yozell@noaa.gov'; 'christopher.vaccaro@noaa.gov'; 'dwh.staff@noaa.gov'
Subject: Re: **UPDATE** DISPERSANT Q & A

And Margaret and Sally, I would love to have you concurrence before moving forward with these comments.

Justin Kenney

NOAA Director of Communications
and External Affairs
Office: 202-482-6090
Cell: 202-821-6310
Facebook: www.facebook.com/noaa.lubchenco
(Sent from my BlackBerry)

From: Beth Dieveney <Beth.Dieveney@noaa.gov>
To: David Holst <David.Holst@noaa.gov>
Cc: Jennifer Austin <Jennifer.Austin@noaa.gov>; Justin Kenney <Justin.kenney@noaa.gov>; 'margaret.spring@noaa.gov' <Margaret.Spring@noaa.gov>; 'sally.yozell@noaa.gov' <Sally.Yozell@noaa.gov>; 'christopher.vaccaro@noaa.gov' <Christopher.Vaccaro@noaa.gov>; Deepwater NOAA Support (dwh.staff@noaa.gov) <dwh.staff@noaa.gov>
Sent: Sat May 08 16:39:42 2010
Subject: Re: **UPDATE** DISPERSANT Q & A

In general these appear to be pretty factual and might not need a higher policy review. However, I would ask that folks on this email review #10 for messaging purposes.

Agreed?
Thanks

we will have a process in place on Monday for internal review of documents.

David Holst wrote:

All, here are the responses to the dispersant questions.

Dave

Jennifer Austin wrote:

Justin,
David holst has the lead, is working on getting something together by end of today.
Copying dhw.staff
Jennifer Austin, NOAA Communications, 2023029047

From: Justin Kenney
To: 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'sally.yozell@noaa.gov' <sally.yozell@noaa.gov>
Cc: Jennifer Austin; 'christopher.vaccaro@noaa.gov' <christopher.vaccaro@noaa.gov>
Sent: Sat May 08 13:56:26 2010
Subject: Fw: **UPDATE** DISPERSANT Q & A

Hello. Seeking guidance on best to process this request within NOAA.

Thx

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To: O'Neil, Christopher LCDR <christopher.t.o'neil@uscg.mil>; Gilson, Shannon <SGilson@doc.gov>; Ronald A LaBrec <Ronald.A.LaBrec@uscg.dhs.gov>; Nick Shapiro <Nicholas_S._Shapiro@who.eop.gov>; Benjamin LaBolt <Benjamin_LaBolt@who.eop.gov>; Matt_lee-ashley <Matt_lee-ashley@ios.doi.gov>; kendra_barkoff <kendra_barkoff@ios.doi.gov>; David Gray <gray.david@epa.gov>; Perry.Dale@epamail.epa.gov <Perry.Dale@epamail.epa.gov>
Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>; Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>; Vaccaro, Christopher <Christopher.Vaccaro@noaa.gov>; justin.kenney@noaa.gov <justin.kenney@noaa.gov>
Sent: Sat May 08 13:19:36 2010
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Hey Guys,
Ron @ JIC is eager to hold a technical background press briefing on dispersants either tomorrow or Monday. Whatever the case, it's very important that we finish this q&a today and get it through the OMB process.
I've looped Justin from NOAA and David and Dale from EPA.
Let me know if you have any questions or suggestions.
Thanks,
Adora

From: "O'Neil, Christopher LCDR" [christopher.t.o'neil@uscg.mil]
Sent: 05/07/2010 08:45 PM AST
To: Adora Andy; "Gilson, Shannon" <SGilson@doc.gov>; <Ronald.A.LaBrec@uscg.dhs.gov>; "Nick Shapiro" <Nicholas_S._Shapiro@who.eop.gov>; "Benjamin LaBolt" <Benjamin_LaBolt@who.eop.gov>; "Matt_lee-ashley" <Matt_lee-ashley@ios.doi.gov>; "kendra_barkoff" <kendra_barkoff@ios.doi.gov>
Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher" <Christopher.Vaccaro@noaa.gov>
Subject: RE: ACTION: DISPERSANT Q & A

Ill send around the horn early sat morn

Sent with Good (www.good.com)

-----Original Message-----
From: Andy.Adora@epamail.epa.gov [mailto:Andy.Adora@epamail.epa.gov]
Sent: Friday, May 07, 2010 05:56 PM Eastern Standard Time
To: Gilson, Shannon; 'Ronald.A.LaBrec@uscg.dhs.gov'; Nick Shapiro; Benjamin LaBolt; Matt_lee-ashley; kendra_barkoff; O'Neil, Christopher LCDR
Cc: Oster.Seth@epamail.epa.gov; Johnson.Alisha@epamail.epa.gov; Vaccaro, Christopher
Subject: Re: ACTION: DISPERSANT Q & A

Adding Coast Guard Chris. EPA will work on this over the weekend. Been putting reporters off for a while so we really need this by Monday.
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Cc: Seth Oster; Alisha Johnson; "Vaccaro, Christopher" <Christopher.Vaccaro@noaa.gov>
Subject: Re: ACTION: DISPERSANT Q & A

Adding in Chris.

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From: Andy.Adora@epamail.epa.gov <Andy.Adora@epamail.epa.gov>
To: LaBrec, Ronald CAPT <Ronald.A.LaBrec@uscg.dhs.gov>; Shapiro, Nicholas S. <Nicholas_S._Shapiro@who.eop.gov>; LaBolt, Benjamin <Benjamin_LaBolt@who.eop.gov>; Matt_Lee-Ashley@ios.doi.gov <Matt_Lee-Ashley@ios.doi.gov>; Kendra_Barkoff@ios.doi.gov <Kendra_Barkoff@ios.doi.gov>; Gilson, Shannon
Cc: Oster.Seth@epamail.epa.gov <Oster.Seth@epamail.epa.gov>; Johnson.Alisha@epamail.epa.gov <Johnson.Alisha@epamail.epa.gov>
Sent: Fri May 07 16:34:10 2010
Subject: ACTION: DISPERSANT Q & A

Hey folks,
Below are the questions we're getting on dispersants. Many of these questions should be answered by the Coast Guard, DOI, DOC, EPA or even BP, but we think it would be best to get one set of agreed upon answers so that we can all operate from the same script, rather than send reporters back and forth.
Below are some draft answers and suggestions for which agency may have the correct answer. Let's get this initial group to draft and sign off on answers and then I'll get OMB sign off.
Let me know if you have something to change/add to a draft answer, etc.
This is a free exchange of ideas here... nothing set in stone.
Thanks,
Adora

QUESTIONS:

1) It looks like BP is running out of dispersants, is that true? [Coast Guard] DRAFT answer: NO

2) Have dispersants ever been used on this large of a scale before? [EPA / NOAA] DRAFT answer: NO

3) What are the effects on marine life? [DOI]

4) Will the effects of marine life ever be known? [EPA / DOI] DRAFT: The authorization given to BP to use the dispersant on oil present on the surface of the water included specific conditions to ensure the protection of the environment and the health of residents in affected areas. We will continue to monitor for the effects of this dispersant on the environment and we reserve the right to discontinue the its use.

5) The National Research Council wrote a paper in 2005 recommending joint research between feds and industry. Did the federal government actually do that? [EPA DRAFTING] Note: short answer is yes.

6) How does the dispersant work? [Does anyone have this info mocked up already?]

7) Corexit is the type of dispersant being used. BP says they're using 2 different types. What's the difference? [EPA] DRAFT: One is water soluble, one is oil soluble. For more information, please contact the product manufacturer. (Looking to see if there's more we can say without compromising CBI)

8) Can someone speak to the ingredients and any concerns about it? DRAFT: This is considered Confidential Business Information. For more information, please contact the manufacturer.

9) How much dispersant has been released so far into the water? [COAST GUARD? NOAA?] Note: Is this something that is posted daily on a website where we can direct reporters? That would be very helpful

10) Have we been able to make an assessment on the effects of the dispersant on the environment? [EPA DRAFTING]

11) What kind of positive/negative effects are we seeing from the dispersant? [EPA DRAFTING] Note: We'll say something about BP providing results of testing and that we'll continue to be aggressive in monitoring and testing as it is used.

12) What are the future plans for dispersants? Are we looking to continue using them heavily?
Surface use:
The authorization given to BP to use the dispersant on oil present on the surface of the water included specific conditions to ensure the protection of the environment and the health of residents in affected areas. At this time, BP is authorized to continue use of this dispersant on the surface of the water. We will continue to monitor for the effects of this dispersant on the environment and we reserve the right to discontinue the its use.

Underwater use:
The Coast Guard and EPA authorized BP to conduct tests of a new approach to use this dispersant underwater, at the source of the leak. The tests were done to determine if the dispersant would be effective in breaking up the oil and helping to control the leaks. No further use of

dispersants underwater is planned until BP provides the results of these tests for our

###

Adora Andy
Press Secretary
U.S. Environmental Protection Agency
Office of Public Affairs
202-564-2715
andy.adora@epa.gov

-- Beth Dieveney NOAA Program Coordination Office Office of the Under Secretary 14th & Constitution Ave., NW, Room 5811 Washington, DC 20230 phone: 202-482-1281 cell: 240-328-4812 fax: 202-482-4116

Received(Date): Sun, 09 May 2010 09:55:04 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Research council meeting on Monday
To: Steve Murawski <Steve.Murawski@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Steve~

Please send any outcomes of the oil spill and research coordination across NOAA discussion at the Research Council meeting on Monday to: dwh.staff@noaa.gov. We can then make sure it gets to whomever needs it, including Larry Robinson.

One item that has come up with our staff support is the need for internal NOAA scientific review and sign-off on various fact sheets, Q&As, and talking points before we send documents through OMB-WH clearance. Might you provide a list of experts that we could tap based on various issues? (thus far issues have included fisheries (eg seafood safety, sheen impacts on fish); dispersants general and impacts on wildlife, etc.

Give me a call (cell is below) if you want to discuss best approach to engage scientists in an efficient manner - as turn-around times are very short and often happen on weekends.

Thanks,
Beth

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Sun, 09 May 2010 13:16:14 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: NRT Meeting Notes, May 9, 2010, 11 AM
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>,David Kennedy <David.Kennedy@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Below are notes from the May 9, 11 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 9, 2010
11:00 AM

The next NRT meeting is May 10 at 11 AM.

Situational Status:
-Protocols and requirements are being developed for a third test on subsea dispersants.
-The test will take 8 - 10 hours. Long-term monitoring plan will be developed simultaneously.
-Weather was not conducive to burning yesterday and will continue to be unfavorable today.
-Response operations today will focus on shoreline response and sampling.
-Containment dome has failed, and second containment dome is being designed to address hydrate problem.

Communications:
-Big story is containment dome.
-Another news story is the beginning of hearings regarding investigations on how this happened. Will impact oil drilling.
-Briefings will also be occurring between Thad Allen and third party validators.

Legal Affairs:
-Coordination of legal support for NIC is occurring in DC and New Orleans.
-The NIC legal coordinators will coordinate all legal questions and report out on daily legal calls.

Intergovernmental Affairs:
-Adm. Landry has talked to Gov. Riley about his concern re: booms.
-Work is occurring with the states to build up websites/new media to get information out, especially regarding claims.

Congressional Affairs:
-Daily calls occurring through the weekend.

Received(Date): Sun, 09 May 2010 10:52:22 -0700
From: John Incardona <John.Incardona@noaa.gov>
Subject: Re: [Fwd: Re: **UPDATE** DISPERSANT Q & A]
To: john rapp <John.Rapp@noaa.gov>
Cc: Steve murawski <Steve.Murawski@noaa.gov>,Usha Varanasi <Usha.Varanasi@noaa.gov>, John Stein <John.E.Stein@noaa.gov>,Nathaniel Scholz <Nathaniel.Scholz@noaa.gov>

Hi all
Didn't see this till this AM. I added a comment relating to toxicity of dispersant to corals. May want to consider that caveat in discussion of dispersant toxicity to marine life.

One other comment that is not addressed is the vague reference in the MSDS for Corexit 9500 indicating "a potential to bioconcentrate" but no indication of which component.

John

On May 8, 2010, at 6:29 PM, Usha Varanasi wrote:

> John R.
> Here are my comments attached. I am hoping that John Incardona will look at this asap but I do not have his telephone number here in La Jolla. I am copying John Stein to see if he can get hold of John I. or Nat Scholz to see if we can have these tps quickly looked over
>
> john rapp wrote:
>
> > Steve, John, and Usha:
> >
> > Can you review the attached Q and A about dispersants with a lens for seafood safety? I'm particularly interested in having you provide input on #4. A review of the rest would be great too.
> >
> > As with all things related to the spill, I need your input ASAP.
> >
> > Thanks,
> > John
> >
> > **From**: John Rapp <John.Rapp@noaa.gov>
> > **To**: Craig R O'Connor <Craig.R.O'Connor@noaa.gov>
> > **Cc**: Margaret Spring <Margaret.Spring@noaa.gov>; 'sally.yozell@noaa.gov' <Sally.Yozell@noaa.gov>; Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>; _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>; Jennifer Austin <Jennifer.Austin@noaa.gov>; Justin Kenney <Justin.kenney@noaa.gov>
> > **Sent**: Sat May 08 17:50:32 2010
> > **Subject**: [Fwd: Re: **UPDATE** DISPERSANT Q & A]

Craig,

Lois Schiffer put your name forward to provide the GCNR review of the attached Q&A re: dispersant use. EPA would like to use the answers as soon as tomorrow, so please comment ASAP.

Thanks,
John

-------- Original Message --------

Subject: Re: **UPDATE** DISPERSANT Q & A
Date: Sat, 08 May 2010 16:00:01 -0400
From: David Holst <David.Holst@noaa.gov>
To: Jennifer Austin <Jennifer.Austin@noaa.gov>
CC: Justin Kenney <Justin.kenney@noaa.gov>, "'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>, "'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>, "'christopher.vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>, "Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
References: <888D35080D24854AB67E0FE7147601F3040F8239C0@Vmail51.noaa.nems>

All, here are the responses to the dispersant questions.

Dave

Jennifer Austin wrote:

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> Copying dhw.staff
> Jennifer Austin, NOAA Communications, 2023029047
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dispersant on the environment? [EPA DRAFTING]

11) What kind of positive/negative effects are we seeing from the
dispersant? [EPA DRAFTING] Note: We'll say something about BP providing
results of testing and that we'll continue to be aggressive in
monitoring and testing as it is used.

12) What are the future plans for dispersants? Are we looking to
continue using them heavily?
Surface use:
The authorization given to BP to use the dispersant on oil present on
the surface of the water included specific conditions to ensure the
protection of the environment and the health of residents in affected
areas. At this time, BP is authorized to continue use of this dispersant
on the surface of the water. We will continue to

monitor for the effects
of this dispersant on the environment and we
reserve the right to
discontinue the its use.

Underwater use:
The Coast Guard and EPA authorized BP to
conduct tests of a new approach
to use this dispersant underwater, at the source of
the leak. The tests
were done to determine if the dispersant would be
effective in breaking
up the oil and helping to control the leaks. No
further use of
dispersants underwater is planned until BP provides
the results of these
tests for our

###

Adora Andy
Press Secretary
U.S. Environmental Protection Agency
Office of Public Affairs
202-564-2715
andy.adora@epa.gov

--
Usha Varanasi, Ph.D.
Science and Research Director
Northwest Fisheries Science Center, and
Acting Science and Research Director
Southwest Fisheries Science Center
DOC/NOAA/NMFS
Seattle: Phone - (206) 860-6795, http://www.nwfsc.noaa.gov
La Jolla: Phone - (858) 546-7067, http://swfsc.noaa.gov

"We must be the change we wish to see in the world..." - Mahatma Gandhi
<Dispersants Q&A_May 8, 2010_2.doc>

Received(Date): Sun, 09 May 2010 21:14:44 -0400
From: Justin Kenney <Justin.kenney@noaa.gov>
Subject: Tonight's Deepwater Horizon JIC Update
To: "'noaahq.leadership@noaa.gov'" <NOAAHQ.Leadership@noaa.gov>,_HDQ Oil Spill <Oil.Spill@noaa.gov>,"Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"david.kennedy@NOAA.GOV" <David.Kennedy@noaa.gov>

Here is today's report from the JIC. These daily updates include excellent information for our ongoing talking points. For example, note the "by the numbers" section. There are also good phone numbers for the public.

Justin,

Prepared by the Joint Information Center

UPDATED May 9, 2010 6 PM

**** For a full timeline of the Administration-wide response, visit the White House Blog.***

PAST 24 HOURS

DOI Leadership Deployments

Secretary of the Interior Ken Salazar dispatched Director of the National Park Service Jon Jarvis and Acting Director of the Fish and Wildlife Service Rowan Gould to command centers along the Gulf Coast to help lead efforts to protect coastal communities and natural resources from oil spill. Jarvis is stationed in the Mobile, Ala., Incident Command Center, and Gould is stationed in the Houma, La., Incident Command Center.

Drilling Rig Inspection and Oversight

MMS has completed its inspections of all 30 deepwater drilling rigs and is now inspecting all deepwater production platforms. The Minerals Management Service (MMS) continues to work with BP to explore all options that could stop or mitigate oil leaks from the damaged well. Pursuant to MMS's regulatory authority, all plans are being reviewed and approved by MMS before implementation.

Snare Booms Erected

Cleanup crews have placed snare boom to collect tarballs in the affected area on Dauphin Island. Snare boom can be staked along beaches and shoreline to act as a filter and prevent tarballs from coming ashore. Analysis of the tarballs is being conducted to determine the origin of the oil and may take 48 hours to complete. Shoreline assessment teams typically consist of three or four trained personnel prepared to evaluate a section of shoreline, equipped with proper protective gear. Trained volunteers may assist members of the group. Team members must have basic site

safety training and training sufficient to complete an evaluation of the beach. Reports of tarballs can be made to the Coast Guard at any time at 1-800-448-5816.

13 Staging Areas Along Gulf Coast

13 staging areas have been set up to protect vital shoreline in all potentially affected Gulf Coast states (Biloxi, Miss., Pascagoula, Miss., Pensacola, Fla., Panama City, Fla., Dauphin Island, Ala., Grand Isle, La., Shell Beach, La., Slidell, La., Venice, La., Orange Beach, Al., Theodore, Al., Pass Christian, Ms., Cocodrie, La.).

NOAA Oversight Activities

NOAA Administrator Jane Lubchenco met with scientists at the Dauphin Island (Ala.) Sea Lab and representatives from the Mobile (Ala.) Port Authority, and participated in a briefing at the Mobile Incident Command Center. NOAA continues to provide scientific support including: modeling the trajectory and location of the oil, getting pre-impact shoreline samples surveys and baseline measurements, and planning for open water and shoreline remediation.

NOAA Observational Flights

One of NOAA's P-3 (hurricane hunter) aircraft conducted a flight to help monitor the location of the Gulf of Mexico Loop Current. NOAA also flew missions for marine mammal surveys, coastal photography and mapping purposes.

By the Numbers to Date:

- Personnel were quickly deployed and approximately 10,000 are currently responding to protect the shoreline and wildlife.
- More than 275 vessels are responding on site, including skimmers, tugs, barges, and recovery vessels to assist in containment and cleanup efforts— in addition to dozens of aircraft, remotely operated vehicles, and multiple mobile offshore drilling units.
- More than 1 million feet of boom (regular and sorbent) have been deployed to contain the spill— and more than 1.3 million feet are available.
- Nearly 3.5 million gallons of an oil-water mix have been recovered.
- Approximately 325,000 gallons of dispersant have been deployed. More than 500,000 gallons are available.
- 13 staging areas have been set up to protect vital shoreline in all potentially affected Gulf Coast states (Biloxi, Miss., Pascagoula, Miss., Pensacola, Fla., Panama City, Fla., Dauphin Island, Ala., Grand Isle, La., Shell Beach, La., Slidell, La., Venice, La., Orange Beach, Al., Theodore, Al., Pass Christian, Ms., Cocodrie, La.).

Resources:

- For information about the response effort, visit www.deepwaterhorizonresponse.com.
- To contact the Deepwater Horizon Joint Information Center, call (985) 902-5231.
- To volunteer, or to report oiled shoreline, call (866) 448-5816. Volunteer opportunities can also be found here.
- To submit your vessel as a vessel of opportunity skimming system, or to submit alternative response technology, services, or products, call 281-366-5511.

- To report oiled wildlife, call (866) 557-1401 Messages will be checked hourly.
- For information about validated environmental air and water sampling results, visit www.epa.gov/bpspill.
- For National Park Service updates about potential park closures, resources at risk, and NPS actions to protect vital park space and wildlife, visit http://www.nps.gov/aboutus/oil-spill-response.htm.
- To file a claim, or report spill-related damage, call BP's helpline at (800) 440-0858. A BP fact sheet with additional information is available here. For those who have already pursued the BP claims process and are not satisfied with BP's resolution, can call the Coast Guard at (800) 280-7118. More information about what types of damages are eligible for compensation under the Oil Pollution Act as well as guidance on procedures to seek that compensation can be found here.

Justin Kenney

NOAA Director of Communications and External Affairs

Office: 202-482-6090 | Cell: 202-821-6310

Email: justin.kenney@noaa.gov

Facebook: www.facebook.com/noaa.lubchenco

Received(Date): Mon, 10 May 2010 08:10:35 -0400
From: Nancy.Thompson@noaa.gov
Subject: Re: Action Needed: Getback to Rep. Bill Cassidy
To: Steve Murawski <Steve.Murawski@noaa.gov>
Cc: John Oliver <John.Oliver@noaa.gov>, John Rapp <John.Rapp@noaa.gov>,Brian Pawlak <Brian.T.Pawlak@noaa.gov>,Jenni Wallace <Jenni.Wallace@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>, Eric Schwaab <Eric.Schwaab@noaa.gov>,Samuel Rauch <Samuel.Rauch@noaa.gov>,Michael S Gallagher <Michael.S.Gallagher@noaa.gov>
Attachment

We are in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish. The standards that are applied for oil is based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Received(Date): Sun, 09 May 2010 16:31:36 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: Action Needed: Getback to Rep. Bill Cassidy
To: John Oliver <John.Oliver@noaa.gov>, Nancy Thompson <Nancy.Thompson@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, Brian Pawlak <Brian.T.Pawlak@noaa.gov>,Jenni Wallace <Jenni.Wallace@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>, Eric Schwaab <Eric.Schwaab@noaa.gov>,Samuel Rauch <Samuel.Rauch@noaa.gov>,Michael S Gallagher <Michael.S.Gallagher@noaa.gov>

nancy is poc on testing the basic protocol is worked out but the nodes need connecting

sm

John Oliver wrote:

> Brian -- Is the SER web info not good enough except for the testing/monitoring question? jo
>
> Steve -- can you or someone answer the testing/monitoring question? jo
>
> John Rapp wrote:
>
> > All,
> >
> > During today's Congressional staff conference call, Rep. Bill Cassidy's Office asked for information on testing/monitoring of the impacted fisheries areas and how it is determined what areas should be closed (or re-opened) and how that information is relayed with the public. Can you provide this response?
> >
> > Mike Jarvis will be responsible for routing the response back to Rep. Cassidy's office.
> >
> > Thanks,
> > John

We are in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish. The standards that are applied for oil is based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Received(Date): Mon, 10 May 2010 09:47:49 -0400
From: Beth.Dieveney@noaa.gov
Subject: Re: Prep for May 10 NRT Meeting with Agency Heads at 11:00
To: "william.conner" <William.Conner@noaa.gov>, Mary.Glackin@noaa.gov
Cc: David Holst <David.Holst@noaa.gov>, Charlie Henry <Charlie.Henry@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Jainey Bavishi <Jainey.Bavishi@noaa.gov>,Richard M Love <Richard.M.Love@noaa.gov>, Kris Sarri <ksarri@doc.gov>,William Conner <William.Conner@noaa.gov>,Steve Lehmann <Steve.Lehmann@noaa.gov>, John Rapp <John.Rapp@noaa.gov>

Thank you Bill. Mary Glackin will participate on behalf of NOAA leadership.
Dave Westerholm will provide support.

----- Original Message -----
From: "william.conner" <William.Conner@noaa.gov>
Date: Monday, May 10, 2010 9:41 am
Subject: Prep for May 10 NRT Meeting with Agency Heads at 11:00
To: Beth Dieveney <Beth.Dieveney@noaa.gov>, David Holst <David.Holst@noaa.gov>, Charlie Henry <Charlie.Henry@noaa.gov>, Dave Westerholm <Dave.Westerholm@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, Jainey Bavishi <Jainey.Bavishi@noaa.gov>, Richard M Love <Richard.M.Love@noaa.gov>, Kris Sarri <ksarri@doc.gov>, William Conner <William.Conner@noaa.gov>, Steve Lehmann <Steve.Lehmann@noaa.gov>, John Rapp <John.Rapp@noaa.gov>

> For Official Use Only/
> /May 10, 2010
> National Response Team Meeting at 1100: Agency Heads
>
> Call in Number: [redacted] b6
> Please dial in 15 minutes before the call for a roll call starting at
>
> 10-minutes before the scheduled start time.
> /
> / DOC will be represented on the call by Margaret Spring, NOAA Chief
> of
> Staff. NOAA SSC Steve Lehmann or Charlie Henry will be with RADM
> Landry
> at the Unified Area Command in Robert, LA. Any detailed or technical
>
> questions may be referred to them.
>
> DOC/NOAA Objectives for the Meeting:
>
> 1. Convey substantive messages about NOAA involvement in the response.
> 2. Acquire current status of response, coordination and outreach efforts.
> 3. Answer questions on NOAA activities and products.
>
> The following are attached:
>
> * Agenda for the meeting with call-in information.
> * Spot Weather forecast prepared today (distributed to NRT)
> * Most recent NOAA trajectory prediction for location of oil
> Wednesday evening (distributed to NRT)
> * Most recent Shoreline Impact Outlook prepared May 9 (distributed
> to NRT)
> * Trajectory Field Guide - provides tips on reading NOAA

> trajectories (distributed to NRT)
>
> Possible DOC Contributions to the Meeting
>
> * _Weather
>
> _
> o The winds will be out of the SE through Wednesday, gradually
> building from 15 kts today to 20 kts Wednesday. Seas will
> be choppy. No precipitation is predicted.
>
> * _Trajectory (__made available to NRT this morning)_
>
> o Significant winds from the E and SE will move the main plume
> and other surface oil north and west. The Mississippi
> Delta, Breton Sound, the Chandeleur Islands and areas
> directly north have a potential for shoreline contacts
> through Wednesday. West of the Mississippi Delta, the
> shoreline between Timbalier Bay and Barataria Bay is
> threatened on Monday. With continued winds from the E and
> SE, potential oil contacts could reach as far west as Point
> Au Fer Island (the eastern margin of Atchafalaya Bay) by
> Wednesday. Note that heavy portions of the slick threaten
> the tip of the Delta as the wind move the oil north and west.
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> _
>
> * Possibility of landfall exists from Alabama/Florida border
> to
> the eastern margin of Atchafalaya Bay through Friday of
> this week.
>
> * _Agenda Item: Subsurface Response Status (this is just for
> background)
> _
>
> * _Sea bed injection of dispersants._
>
> The basic framework for further evaluating sea bed injection
> of dispersants is outlined below. This morning at 0500, the
> proof of concept stage was uninitiated. The surface plume
> is
> being monitored visually from the air as well as using Side
> Looking Airborne Radar (SLAR.)
>
> 1. _Proof of Concept_: A short test coordinated with
> aerial observations to determine whether the injection
> changes the delivery of oil to the surface.
>
> 2. _Response Option with Monitoring._ If the proof of
> concept test demonstrates some potential benefit from
> sea bed injection of dispersant, then this technique
> would become available for consideration under certain
> conditions. In all cases when it is used, a monitoring
> program would be implemented according to the Dispersed
> Plume Characterization Plan (part of the BP proposal)
> and would include delineation of the dispersed plume

> (fluorometer, particle size analyzer, UV fluorescence
> to
> differentiate between naturally and chemically-dispersed
> oil), further characterization of the plume using water
> samples (total PAH and dissolved oxygen), and physical
> oceanographic data to document water column
> stratification (conductivity temperature and depth) and
> currents (Acoustic Doppler Profilers).
>
> * _Agenda Item:_ Polling of NRT Secretaries
>
> o No priority items to mention.
>
> --
> William G. Conner, Ph.D.
> Chief, HAZMAT Emergency Response Division
> NOAA Office of Response and Restoration
> Phone: 301-713-3038 (190)
> Cell: 240-460-6475
>

Thank you Bill. Mary Glackin will participate on behalf of NOAA leadership.
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Date: Monday, May 10, 2010 9:41 am
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To: Beth Dieveney <Beth.Dieveney@noaa.gov>, David Holst <David.Holst@noaa.gov>, Charlie Henry <Charlie.Henry@noaa.gov>, Dave Westerholm <Dave.Westerholm@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, Jainey Bavishi <Jainey.Bavishi@noaa.gov>, Richard M Love <Richard.M.Love@noaa.gov>, Kris Sarri <ksarri@doc.gov>, William Conner <William.Conner@noaa.gov>, Steve Lehmann <Steve.Lehmann@noaa.gov>, John Rapp <John.Rapp@noaa.gov>

> For Official Use Only/
> /May 10, 2010
> National Response Team Meeting at 1100: Agency Heads
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> Call in Number: 1-800-320-4330 and participation pin is: 307212#
> Please dial in 15 minutes before the call for a roll call starting at
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> currents (Acoustic Doppler Profilers).
>
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>
> o No priority items to mention.
>
> --
> William G. Conner, Ph.D.
> Chief, HAZMAT Emergency Response Division
> NOAA Office of Response and Restoration
> Phone: 301-713-3038 (190)
> Cell: 240-460-6475
>

Received(Date): Tue, 11 May 2010 15:58:55 -0400
From: Jenni Wallace <Jenni.Wallace@noaa.gov>
Subject: Response to Q from JIC
To: Connie Barclay <Connie.Barclay@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>, "icc.nmfs" <ICC.NMFS@noaa.gov>,kim amendola <kim.amendola@noaa.gov>

Connie,
Please see below for a response to your earlier question, "Is NOAA Fisheries doing anything to study how the oil might impact spawning fish, baby fish?"

The short answer is indeed "yes."

Jenni

-------- Original Message --------

Subject:[Fwd: Re: Question from the JIC]
Date: Tue, 11 May 2010 15:52:58 -0400
From: John Oliver <John.Oliver@noaa.gov>
To: Jenni Wallace <Jenni.Wallace@noaa.gov>

-------- Original Message --------

Subject: Re: Question from the JIC
Date: Tue, 11 May 2010 12:38:06 -0700
From: Usha Varanasi <Usha.Varanasi@noaa.gov>
To: John Oliver <John.Oliver@noaa.gov>
CC: Nancy Thompson <Nancy.Thompson@noaa.gov>, Bonnie Ponwith <Bonnie.Ponwith@noaa.gov>, Steve Murawski <Steve.Murawski@noaa.gov>, usha Varanasi <Usha.Varanasi@noaa.gov>
References:<4BE9A346.9080201@noaa.gov>

John,
As soon as we receive samples of oil and dispersant, we will begin following studies 1-3). We are all set to go within a day of receiving oil/dispersant.
The results of these will provide a basis for what we might expect to find in pelagic embryos/larvae in the Gulf, and inform planning of any subsequent studies with marine species. We will know rapidly if the toxicity is the same as or different from ANSCO, and will indicate which endpoints are important.

1) Characterize the toxicity of mechanically dispersed DH emulsified surface oil with zebrafish embryos, compared to Alaska North Slope crude oil (ANSCO) as a standard oil toxicant
2) Characterize the toxicity of DH emulsified surface oil mixed with

Corexit 9500 and 9527 with zebrafish embryos, again with comparison to ANSCO.
3) Characterize the potential for photo-enhanced DH oil toxicity in zebrafish embryos.

So the short answer is. We are planning and ready to assess potential impact on egg/larvae/baby fish in laboratory exposure first.

Usha

John Oliver wrote:
> I believe our science program we discussed earlier today does --
> correct?? jo
>
> Is NOAA Fisheries doing anything to study how the oil might impact
> spawning fish, baby fish?
>

--
Usha Varanasi, Ph.D.
Science and Research Director
Northwest Fisheries Science Center, and
Acting Science and Research Director
Southwest Fisheries Science Center
DOC/NOAA/NMFS
Seattle: Phone - (206) 860-6795, http://www.nwfsc.noaa.gov
La Jolla: Phone - (858) 546-7067, http://swfsc.noaa.gov

"We must be the change we wish to see in the world..." - Mahatma Gandhi

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><((((°>`·.¸¸.·´¯`·.¸¸.·´¯`·...¸><((((°>`·.¸¸.·´¯`·.¸¸.·´¯`·...¸><((((°>
Jennifer M. Wallace
Office of the Assistant Administrator
NOAA Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910

Phone: (301) 713-2239 x206
Email: Jenni.Wallace@noaa.gov

Received(Date): Tue, 11 May 2010 23:45:42 -0400
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Subject: Prep for EPA dispersants breif
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Justin kenney <Justin.kenney@noaa.gov>
EPA Dispers Brief run of show.docx
EPA Briefing opening statement TPs.docx

Hi, we're on for Dr L and Dave Westerholm to do the dispersant press call with Lisa Jackson tomorrow. She will walk or cab from CEQ to EPA to arrive at 3:30, call starts at 4. Justin and I will plan to be there, do any of you intend to staff it? I don't think we need you to, but if you want to come I'd need to let EPA know to speed up our clearance through security into their building, so just let me know.

Attached is a draft briefing memo we can give Dr L. I'm not sure if/how her books are being assembled these days, let me know if you guys will get this to her and whoever else should see it, or if you'd like me to. It is an overview of the flow of events and a start at some talking points. The TPs are almost completely recycled.

I expect to get Lisa Jackson's TP's from EPA in the morning and will then work with Dave Holst and Westerholm to add some details to Dr Lubchenco's specific to dispersants.

It will be brief opening statements to leave plenty of time for Q&A.

--
Jennifer Austin
NOAA Communications & External Affairs
202-302-9047
www.noaa.gov
www.climate.gov
www.facebook.com/noaa.lubchenco

What: EPA/NOAA Dispersants Media Briefing.

When: Weds. May 12, 2010, 3:30 – 4:45pm

Where: EPA Building (press on phone)

Who:
On the Call from EPA:

- Administrator Lisa P. Jackson
- Paul Anastas, Assistant Administrator for the Office of Research and Development
- Dana Tulis, Acting Office Director Office of Emergency Management

On the Call from NOAA:

- Dr. Jane Lubchenco, Undersecretary of Commerce for Oceans and Atmosphere and NOAA Administrator.
- Dave Westerholm, Director, NOAA Office of Response and Restoration.

AGENDA

3:30 Arrive EPA. 1200 Pennsylvania Ave. Need ID.

Contact: Heidi M. Ellis, Director of Scheduling, Office of the Administrator I US EPA
Phone: 202-564-3204, Cell: 202-355-5212
Location: The press pre-brief and the press call will be held in **The Administrator's Conference Room, which is located in Room 3000 (3rd floor) of the Ariel Rios North Building.** The Ariel Rios North Building is part of the EPA Headquarters complex located on 12th Street, NW between Constitution and Pennsylvania Avenues (directly at the entrance to the Federal Triangle Metro station).

When you enter the building, you will need to check in with security. This should take a few minutes, but staff will be there to make sure it goes smoothly.

3:35 – 3:55 – Experts and Principles Pre-brief.

Notes on Pre-brief:
Both EPA and NOAA will be assembled in the same room in the EPA building at 3:30pm ET and can call into the conference call line at that point or any point thereafter. We think JIC will probably want to call in with whichever of the two NOAA science advisers is on duty, to give any relevant on the ground updates, but we wont' keep them on the line for the call.

4 PM Press Call

4:00- 4:02 - Adora Andy (EPA Press Secretary) To Introduce and Moderate
4:03- 4:08 - Lisa Jackson (3-4 mins) [more detailed draft TPs coming from EPA tomorrow]
Recent visit to Gulf, spill is priority for the administration
EPA role- air, water monitoring
Dispersants - what we don't know.
4:09 - 4:14 Jane Lubchenco (3-5 mins)
NOAA activities in gulf
NOAA role as it relates to dispersant use.

4:14 – 4:45 Press Q&A
Adora Moderates.

EPA Briefing – DRAFT Talking Points 5.11.10

· Since the early hours of this incident, NOAA has been "all hands on deck" in support of the federal response to the Deepwater BP oil spill.

· As the nation's lead scientific advisor on oil spills, NOAA continually trains and plans for these types of incidents.

NOAA is providing trajectory support and coordinating scientific weather and biological response services. We are contributing expertise from the Ocean Service, Weather Service, Fisheries Service, Satellite Service and Research Offices.

Regarding the use of dispersants, NOAA is working closely with EPA and other Federal Partners to determine the most effective and appropriate use of dispersants. NOAA's Scientific Support Coordinators are working as part of the Unified Command, and advise on when and where dispersants should be used. These decisions are made based on……

Dispersants are one kind of countermeasure and an important element in our toolbox to mitigate spills. They are chemicals that are applied directly to the spilled oil in order to remove it from the water surface.

Dispersants break up the sheet of oil into smaller components which allows them to dissipate into the water and evaporate, degrade and weather more rapidly.

Use of dispersants is an approved portion of the National Response Plan for incidents of this type and preauthorized in this area and offshore by the US Coast Guard, EPA, NOAA, DOI and Louisiana Dept. of Environmental Quality.

[Additional overview info on dispersant use, or NOAA's role in directing it's use and monitoring its effectiveness and impacts.]

AFTER Q&A In closing:

NOAA is deeply concerned about the effects of this oil on the Gulf fisheries and marine ecosystems. The Gulf of Mexico is the nursery ground for shrimp, crabs, oysters and hundreds of species of fish like red snapper and redfish. NOAA is also assessing the impacts this oil could have on coastal communities, marine protected areas, wetlands, and beaches.

· Every day, around the clock, NOAA has satellites in space, planes in the air, boats in the water, and scientists on the ground supporting the federal response.

NOAA is working closely with partners, such as EPA, to work towards the best possible course of action given this challenging scenario.

Document ID: 0.7.19.667.2

· NOAA will remain "all hands on deck" as we respond to this crisis. And NOAA will continue to stand "shoulder to shoulder" with Gulf coast communities during these incredibly challenging times. And we will do so until the job is done.

Background: From EPA draft Q&A, with NOAA input. Updated full Q&A coming.

Q3: What effects, if any, does the use of dispersants have on marine life?

R3: Dispersants are one-one hundredth to one-tenth less toxic than the oils they are dispersing. Thus, the toxicity of dispersed oil is due mainly to the oil, not the chemical dispersant.

It's important to understand that the use of dispersants is an environmental trade-off. Using dispersants decreases the environmental risks to shorelines and organisms at the surface. However, the dispersed oil increases the risk to organisms in the upper 10 meters of the water column.

Q4: How will we know the future and total effects on marine life of dispersant use?

R4: It is still too early in the process to know what the scope of the natural resource damage will be. Based on past experience, NOAA and DOI are concerned about impacts to fish, shellfish, marine mammals, turtles, birds and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals and the water column.

(R4 cont'd): The authorization given to BP to use dispersants on surface oil stemming from the Mississippi Canyon 252 spill included specific conditions to ensure the protection of the environment and the health of residents in the affected areas. BP, through the Unified Command, continues to monitor the environment for effects of dispersant use.

Under the Oil Pollution Act, state and federal Natural Resource Trustee agencies are responsible for assessing the injury, loss or destruction of natural resources due to spills. The trustees will also assess any lost human uses of these resources, for example, fishing, hunting, and beach recreational closures. The trustees are also assessing the efficacy of evaluating impacts from the response, including burning, and surface and sub surface dispersant use.

Q6: How do dispersants work?

R6: Oil spill dispersants are chemicals applied directly to the spilled oil in order to remove it from the water surface. Dispersants are commonly applied through specialized equipment

Document ID: 0.7.19.667.2

mounted on an airplane, helicopter or ship. Dispersants, once applied, similar to dishwashing liquid in a sink with oily water, help break up the oil into tiny micron-sized droplets which mix into the upper layer of the ocean.

Dispersed oil does not sink, rather it forms a “plume” or “cloud” of oil droplets just below the water surface. The dispersed oil mixes vertically and horizontally into the water column and is rapidly diluted. Bacteria and other microscopic organisms then act to quickly degrade the oil within the droplets.

Oil on the surface is often cohesive and natural degradation processes are slow. In heavy seas, this surface cohesion is overcome and the oil is naturally dispersed into the surface waters. Dispersants seek to mimic this action.

It should be noted that oil spilled from the Deepwater Horizon incident is also naturally dispersing into the water column due to the physical agitation of the wind, waves and vessel operations.

Document ID: 0.7.19.667.2

Received(Date): Wed, 12 May 2010 11:26:13 -0400
From: Jennifer Austin <Jennifer.Austin@noaa.gov>
Subject: Re: Seafood Safety Messaging
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Cc: john Rapp <John.Rapp@noaa.gov>

I agree we should discuss this, I have to go at 3 though to the EPA briefing on dispersants, which starts in their building at 3:30. I should be back by 4:45 or 5. Can we do 5?

I'd try to get one of my fisheries public affairs officers on with us. There are some calls about this topic earlier today with Monica Medina and fish folks I think that they are also trying to listen in on to get up to speed.

Jainey.Bavishi wrote:
> Jen,
>
> There's been a lot of internal talk about our own monitoring of
> seafood safety in the last 24 hours. I think we need to update
> external messaging based on what we've found. This may already be in
> the works, but if not, maybe you, John and I could meet sometime today
> to discuss. I am free at 3. Does that work for both of you?
>
> Jainey

--
Jennifer Austin
NOAA Communications & External Affairs
202-302-9047
www.noaa.gov
www.climate.gov
www.facebook.com/noaa.lubchenco

Received(Date): Wed, 12 May 2010 11:31:20 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Re: Seafood Safety Messaging
To: Jennifer Austin <Jennifer.Austin@noaa.gov>
Cc: john Rapp <John.Rapp@noaa.gov>

5 is good for both me and John. Let's meet in the war room.

Jennifer Austin wrote:
> I agree we should discuss this, I have to go at 3 though to the EPA
> briefing on dispersants, which starts in their building at 3:30. I
> should be back by 4:45 or 5. Can we do 5?
>
> I'd try to get one of my fisheries public affairs officers on with
> us. There are some calls about this topic earlier today with Monica
> Medina and fish folks I think that they are also trying to listen in
> on to get up to speed.
>
> Jainey.Bavishi wrote:
>> Jen,
>>
>> There's been a lot of internal talk about our own monitoring of
>> seafood safety in the last 24 hours. I think we need to update
>> external messaging based on what we've found. This may already be in
>> the works, but if not, maybe you, John and I could meet sometime
>> today to discuss. I am free at 3. Does that work for both of you?
>>
>> Jainey
>

Received(Date): Wed, 12 May 2010 14:11:07 -0400
From: Scott Smullen <Scott.Smullen@noaa.gov>
Subject: Re: new version of the letter
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: Samuel Rauch <Samuel.Rauch@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'john.oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Eric.Schwaab@noaa.gov'" <Eric.Schwaab@noaa.gov>,"'Monica.Allen@noaa.gov'" <Monica.Allen@noaa.gov>,"'andrew.winer@noaa.gov'" <Andrew.Winer@noaa.gov>,"'Jainey.Bavishi@noaa.gov'" <Jainey.Bavishi@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,Jerry Slaff <Jerry.Slaff@noaa.gov>, Justin kenney <Justin.kenney@noaa.gov>

I don't think we're ready. This is a procedural move that allows us to keep and move boundaries, and people already expect us to have this in place. By itself, it isn't strong enough. I suggest we get concrete data and examples that illustrate how we are implementing our joint protocol for testing and evaluating seafood - on the water, on the docks, and in the market. The procedural stuff can be weaved into that.

Monica Medina wrote:

> Sam are you OK with renaming the protocol ? If so, can I get the latest version with the new title to send over to FDA? We will build an announcement around both these things. We will need start vetting so that we can make sure what we say is socialized with the states and fishermen.
>
> Scott and Monica – do we want to propose to FDA that the Commissioner and Dr. L do a joint statement (or even a press conference like the one on dispersants today) announcing the protocol and the FDA concurrence?
>
> Andy – What outreach to fishermen should we do around this? I will copy you on the next round of emails so you will have the documents.
>
> Thanks! Monica
>
> Monica Medina
>
> Principal Deputy Under Secretary
>
> National Oceanic and Atmospheric Administration
>
> Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

From: Samuel Rauch [mailto:Samuel.Rauch@noaa.gov]
Sent: Wednesday, May 12, 2010 1:47 PM
To: 'monica.medina@noaa.gov'; 'Samuel.Rauch@noaa.gov'; 'John.Rapp@noaa.gov'; 'john.oliver@noaa.gov'; 'Eric.Schwaab@noaa.gov'; 'Scott.Smullen@noaa.gov'; 'Monica.Allen@noaa.gov'
Cc: 'Jainey.Bavishi@noaa.gov'; 'margaret.spring@noaa.gov'
Subject: Re: new version of the letter

Looks good to me

From: Monica Medina <monica.medina@noaa.gov>
To: Samuel Rauch <Samuel.Rauch@noaa.gov>; John Rapp <John.Rapp@noaa.gov>; 'john.oliver@noaa.gov' <John.Oliver@noaa.gov>; 'eric.schwaab@noaa.gov' <Eric.Schwaab@noaa.gov>; Scott Smullen <Scott.Smullen@noaa.gov>; Monica Allen <Monica.Allen@noaa.gov>
Cc: 'jainey.bavishi@noaa.gov' <Jainey.Bavishi@noaa.gov>; margaret.spring@noaa.gov <margaret.spring@noaa.gov>
Sent: Wed May 12 13:15:32 2010
Subject: new version of the letter

Sam – take a quick look. I tweaked a bit so that the Commissioner of the FDA makes the determination, and added a paragraph at the end about the protocol.

On the protocol – what if we rename it as follows:

Protocol for Interpretation and Use of Testing Results For Seafood Harvested In or Near Oil Impacted Areas

Does that work? It is a bit more user friendly and captures the notion of testing on the margins of the slick. Can we re-send it to the FDA with the new title?

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

--
Scott Smullen
Deputy Director
NOAA Communications & External Affairs
202-482-1097 o / 202-494-6515 c

Received(Date): Thu, 13 May 2010 09:50:15 -0400
From: Andrew Winer <Andrew.Winer@noaa.gov>
Subject: Ocean Springs Community Meeting
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Nancy_Wallace.vcf

This is Buck Sutter's very helpful summary of the community meeting he atte=
nded last night in Ocean Springs, MS. If any of you attend community meeti=
ngs, please try to provide similar summaries for distribution.

Thanks!

Andy Winer
Director of External Affairs
NOAA Communications & External Affairs
(202) 482-4640
andrew.winer@noaa.gov

We had about 100 folks at the Ocean Springs meeting tonight. Lots of questi=
ons, mainly about dispersants and BP responsibilities. There are a few sali=
ent points that I suspect will also come up in your meeting.

1. Very positive impression of what NOAA is doing regarding the projection =
maps, etc.

Conversely, folks were not happy at all with EPA for allowing use of disper=
sants, especially at depth with out testing impact on combining two differe=
nt dispersants and interactions with oil with potential toxic side effects.=
EPA indicated they did not approve the use of dispersants at well head.

Questions about the toxicity of dispersants probably represented over half =
the comments/questions. Several questions on ecosystem impacts on plankton,=
fish larvae, bacteria, etc. Also what are the long term impacts.

2. Overall, it was clear people generally do not trust the federal governme=
nt, the credibility of the science, the transparency, or the assurances...I=
think this is a spill over from the Hurricanes. All the feds there indicat=
ed we are working together much better than ever before, but basically fell=
on deaf ears. We will have to work diligently to change this, but will ta=
ke time.

3. BP is saying the right things, but problems with extensive forms and hoo=
ps to get $5K have not sat well. BP is promising 48 hour turn-around.
People are extremely angry/scared about how this could change their life al=
ong the coast...money is not going to change that.

4. There were questions about the stranding of sea turtles and the slightly=
higher than normal numbers and wanted to make the direct correlation with =
the oil spill and dispersants. I told them we are evaluating tissue samples=
and will be able to speak more definitively soon as that info is available=
I am checking to see how we can be more transparent and more proactive in=
getting this info posted on our website.

Hope this helps, my cell is 727-460-7718 if you have questions.

buck

Nancy Wallace wrote:
> Buck,
> After tonight's meeting, can you send Mary a quick email on what she
> might expect in terms of attendance, questions, etc... I know things
> will change meeting to meeting, but thought it would still be a good idea=
>
> -Nancy
>

--
Buck Sutter
NMFS Deputy Regional Administrator
NOAA Regional Collaboration Team Leader

Phone: 727-824-5301
Cell: 727-460-7718
email:Buck.Sutter@noaa.gov

Nancy Wallace
UnderSecretary's Office

HCHB 5224

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Version
2.1

Received(Date): Thu, 13 May 2010 11:51:33 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: NRT Meeting Notes- May 13 2010
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>, Policy.Contacts@noaa.gov,PCO.Contacts@noaa.gov, "Sarri, Kristen" <KSarri@doc.gov>,David Kennedy <David.Kennedy@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

Below are the notes from the May 13, 11:00 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 13, 2010
11:00 PM

Situation Status:

- Subsurface dispersant operations on hold. EPA will make final recommendations within hours. Still awaiting a response from the state of LA. Data from LSU labs from concept of operations test has not yet been received.
- The top hat placed will be installed tomorrow
- The top kill equipment is being put in place for "junk shot" scheduled for May 18
- The first rescue well is at a depth of 3,500 ft.below the seafloor A second rescue well arrived on scene today and will begin drilling.
- Shoreline Cleanup Assessment Team (SCAT) continues for minor shoreline impacts
- The oil slick today was observed to be slightly larger than yesterday
- Continued winds out of the southeast will continue to move the oil to the northwest
- Boom from all over country being flown in
- The distance between the loop current and the oil slick has decreased from 90 miles to 40 miles over the past week.

Communications

- A lot of press coverage on the release of subsea BP footage. There was a NY Times story on boom

Legal:

- Public hearings on the search and rescue and the regulatory and inspection process ongoing.
- DOJ has set up repository of legal documents

Intergovernmental:

- Boom is still a huge issue--working closely with states
- The LA dredge issue- LA has asked for a timeline on decision
- NPR did a article on Gulf Governors role in spill

Congressional

- Senate appropriations will mark up supplemental bill today..
- Trying to coordinate high number of congressional visits to Gulf

Received(Date): Thu, 13 May 2010 13:15:43 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Q on dolphin testing
To: Jenni Wallace <Jenni.Wallace@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>,"Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>
Jessica_Kondel.vcf

Hi--
I received a question from a staffer on the House Natural Resources Cmte regarding the dolphins that washed ashore. Specifically they would like to know if we are testing the dolphins for oil _and_ dispersant impacts?

Thanks.
Jessica

Jessica Kondel

Legislative Affairs Specialist

NOAA Office of Legislative Affairs

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202-482-4960 (Fax)
202-450-0954 (Cell)

Jessica.Kondel@noaa.gov (Internet)

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Version
2.1

Received(Date): Thu, 13 May 2010 16:06:45 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Q&As for Dr. L's oil spill hearings
To: John Oliver <John.Oliver@noaa.gov>,"Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>,"'Steven.Wilson@noaa.gov'" <Steven.Wilson@noaa.gov>,Gary Reisner <Gary.Reisner@noaa.gov>, Helen Golde <Helen.Golde@noaa.gov>,Russell Dunn <Russell.Dunn@noaa.gov>, Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
Cc: Jenni Wallace <Jenni.Wallace@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>
Jessica_Kondel.vcf

Hi everyone--
We had an in initial meeting with Dr. Lubchenco this afternoon to prepare her for her three oil spill hearings, the first of which is next Tuesday. She asked that we prepare some Q&As for the tough questions she may get at her hearings. I have alot of basic information from our TPs and FAQs that I can use to draft some the more general Q&As but will need some help with the more technical and specific Q&As that Dr. L is going to want to be prepared to answer. I will be taking the 8am call in SS tomorrow and would like to spend 15 minutes or so brainstorming and discussing these Q&As which we will need to have drafts of by COB. General topic areas that we will need to flush out Q&As for will be; dispersant and oil effects on the ecosystem and marine resources (turtles, marine mammals, fish, etc,), recreational fishing impacts, economic impacts on fishermen and coastal communities, FDA coordination, seafood safety monitoring and observations. Dr. L also wants to be prepared to answer questions about our involvement in the permitting process, what areas of the response have worked thus far and what hasn't, what areas do we need better research in, etc.

Thanks and see you tomorrow.
Jessica

Jessica Kondel

Legislative Affairs Specialist

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Version
2.1

Received(Date): Fri, 14 May 2010 08:36:45 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Re: Q&As for Dr. L's oil spill hearings
To: John Oliver <John.Oliver@noaa.gov>,"Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>,"'Steven.Wilson@noaa.gov'" <Steven.Wilson@noaa.gov>,Gary Reisner <Gary.Reisner@noaa.gov>, Helen Golde <Helen.Golde@noaa.gov>,Russell Dunn <Russell.Dunn@noaa.gov>, Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
Cc: Jenni Wallace <Jenni.Wallace@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,Lindsay Fullenkamp <Lindsay.Fullenkamp@noaa.gov>
Jessica_Kondel.vcf

Can we please meet at 9:15am this morning in JO's office? If this doesn't work let me know and I can come around and talk with you about what I think we need to have ready for Dr. L.

Thanks.

Jessica Kondel wrote:
> Hi everyone--
> We had an in initial meeting with Dr. Lubchenco this afternoon to
> prepare her for her three oil spill hearings, the first of which is
> next Tuesday. She asked that we prepare some Q&As for the tough
> questions she may get at her hearings. I have alot of basic
> information from our TPs and FAQs that I can use to draft some the
> more general Q&As but will need some help with the more technical and
> specific Q&As that Dr. L is going to want to be prepared to answer. I
> will be taking the 8am call in SS tomorrow and would like to spend 15
> minutes or so brainstorming and discussing these Q&As which we will
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> recreational fishing impacts, economic impacts on fishermen and
> coastal communities, FDA coordination, seafood safety monitoring and
> observations. Dr. L also wants to be prepared to answer questions
> about our involvement in the permitting process, what areas of the
> response have worked thus far and what hasn't, what areas do we need
> better research in, etc.
>
> Thanks and see you tomorrow.
> Jessica

Jessica Kondel

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Version
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Received(Date): Fri, 14 May 2010 08:56:29 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: Draft TP for WH Mtg
To: John Rapp <John.Rapp@noaa.gov>
Cc: Beth Dieveney <Beth.Dieveney@noaa.gov>,Jainey Bavishi <Jainey.Bavishi@noaa.gov>
Lubchenco Talking Points for WH Meeting 05.14.doc

All,

Here is the updated TP.

John Rapp wrote:
> Dave,
>
> I edited the points on closures and seafood safety.
>
> John
>
> David Holst wrote:
>> All,
>>
>> Here are some draft talking points for the White House meeting
>> tomorrow. Not sure how much time Dr. L will have to speak, but here
>> are the issues I thought she should be prepared to talk about. If
>> there are others, please add.
>> - trajectory
>> - loop current
>> - long-term movement
>> - dispersants
>> - fish closures
>> - seafood safety
>>

Talking Points for White House Meeting

Trajectory Status:

- Winds are forecast to continue from the SE from 10-15 kts today and persist at about 10 kts throughout the weekend. The Mississippi Delta, Breton Sound, the Chandeleur Islands and areas directly north have a potential for shoreline contacts throughout the forecast period. Winds and seas are expected to decrease and an in-situ burn may be possible on Saturday.
- Shoreline impacts were reported at Whiskey and Trinity Islands and Port Fourchon. Shoreline Cleanup and Assessment Teams (SCAT) surveyed 19 miles of Dauphin Island, Ala., and the Jackson County shoreline with minimal tarball findings. An additional five teams were deployed to Bon Secour National Wildlife Refuge to recover tarballs.

Loop Current:

- The distance between the surface oil slick and the surface expression of the Loop Current is approximately 50 miles. This has decreased from nearly 90 miles a week ago as the slick expands to the south and the Loop Current extends to the north.
- There is a risk of some oil becoming entrained into the Loop Current, being transported to the southern portion of Florida and then into the Gulf Stream. If this occurs, the oil might reach the Florida Straits as quickly as 8 to 10 days. Alternatively, the top of the Loop Current could separate from the main part of the current and prevent the movement of oil to the Florida Straits.
- During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and tar balls.
- NOAA will be tracking this closely to determine whether any oil becomes entrained.

Document ID: 0.7.19.1171.1

- We looked at three different representations of the Loop Current and chose the Navy model because it is easy to refer to and most closely matches the observations from Horizon Marine (BP contractors who have been watching this for over 25 years).
- We used the slick location based on the latest NESDIS analysis for today - it was pretty consistent with overflight observations (it had the oil a little farther to the south than she observed, but we are being a bit conservative and using this analysis).

What's being done to monitor as we move forward

- *Satellite data*. We can look at sea surface height and sea surface temperature images of satellites to see the LC location. This is a general picture because the satellites have to average data over a few days to get a complete picture.
- *Model data*. We are looking at a number of different models (the same ones we're using to do the uncertainty in the daily forecasts), we are looking at the currents in those and where the loop current is. Three of those models are forecasting the LC to pinch off at the northern margin (which would be a good development with respect to reducing likelihood of oil moving to the Florida Straits). We look at these models twice each day.
- Observed data from the boat Horizon Marine has transiting between the slick and the LC.
- Buoy Drops. BP (via Horizon Marine) and USCG have both dropped buoys, we look at how those are moving each day. The P3 work is intended to add to information about vertical temperature profile.

Long-Term Movement of Oil

- As part of a comprehensive government response to this incident, we need to look at different scenarios, especially since it is unknown how long this release will continue.

Document ID: 0.7.19.1171.1

- Using historical wind and current information, NOAA ran a model that predicted the movement of oil for: (1) 5,000 barrels per day for 90 days; and (2) 50,000 barrels per day for 90 days
- 500 different scenarios were modeled to produce results that show the probability of shoreline threats for a variety of scenarios.
- To ensure the highest confidence in the results, a review of the data and the evaluation method was conducted by experts from NOAA, BP, Navy, MMS, Texas A&M, Texas General Land Office, and Scripps Institute.

Impacts to Marine Mammals

- A total of 129 sea turtles have died since April 30. There are no visual observations of oil on turtles. Necropsy's are being conducted. This mortality rate is within the normal range of mortality.
- A total of 7 dolphins have died since April 30. Two were non-oil related. The remaining 5 are still under investigation.

Dispersants

- Three tests of the operational efficacy of the subsea dispersant injection have been conducted. Early results back from the particle analyzer show the size and concentrations of the oil droplets were dramatically reduced during the test period. Analysis of the testing results is on-going. Discussions are also on-going over the approval process and which decision makers need to be involved as the well is in federal waters of the Gulf.
- The Regional Response Team (RRT) is meeting this morning to discuss the issue.
- Subsea dispersant injection will be used as an integrated response tool to be used when other methods may not be practical (i.e., night operations, adverse weather conditions that prohibit aerial

Document ID: 0.7.19.1171.1

dispersion or burning). The application of subsea dispersant will be accompanied by an adaptive monitoring plan.

- Subsea dispersant injection may reduce the volume of dispersant application by about 60%. Nonetheless, NOAA is interested in carefully evaluating issues related to fate and effects of dispersants. NOAA continues to work closely with EPA and other federal partners to determine the most effective and appropriate use of dispersants.

Factors why more oil has not reached shore

- In the first couple weeks after the spill, ocean currents and prevailing winds inhibited oil from moving towards the shore. Over the past week, the wind has changed and been more consistent out of the SE, and this has begun to push oil towards the shore.
- The currents are very complex in that area and eddies can influence oil movement.
- The effect of the wind on the oil is reduced when the oil is emulsified. This means that the wind will not move the oil as efficiently, so the southerly winds have less influence.
- Freshwater flowing from the Delta forms a convergence zone as it rides up over the sea water. The convergence zone collects oil and makes it necessary for the wind effect to be strong enough to "break through" the convergence effect to get the oil on shore.
- It's possible that the oil may sink before it comes to shore due to lower density of freshwater and/or the oil picking up sediment and becoming denser.

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- The oil released is sweet light crude that tends to break up and break down more rapidly than heavier types of crude oil.

Fisheries Closure:

- NOAA amended the closure area effective 6 pm, May 12th, based on the presence and projected path of the oil.
- The primary modification is the extension of the western boundary of the closure into the Atchafalaya Bay in Louisiana.
- NOAA will provide updates, as frequently as daily, by 12 pm EST with any changes to the closed area effective as of 6 pm EST the same day.
- The six-hour window is meant to give fishermen time to retrieve their gear from an area that is about to close, and advance notice of areas that will soon open for fishing. A status message will be available daily, even when closed area has not changed, on NOAA Weather Radio, at sero.nmfs.noaa.gov, and by calling NOAA Fisheries Southeast Regional Office at 727-824-5305.

Seafood Safety:

- Due to the spill's unprecedented proportion, we have increased the robustness of NOAA's sampling and monitoring plan in order to ensure that consumer confidence in Gulf seafood does not waver.
- Fish and seafood will be tested for the presence of both oil and dispersants. Fish from inside and outside of the oiled area will be tested, as well as at dockside, and from long-liner vessels.
- NOAA and FDA agree on the sampling protocols to evaluate which areas closed to fishing should be re-opened. The protocols will involve a combination of both sensory (smell and taste of fish/seafood) and chemical analysis (of water, sediment, and

Document ID: 0.7.19.1171.1

tissue) to determine if seafood is safe in areas affected by the spill.

- NOAA's goal in the short term is to prohibit harvesting from areas where seafood could have been exposed to oil or dispersants, but re-open waters that were affected by oil as expeditiously as possible after appropriate testing is completed and shows that seafood is back to pre-spill baseline condition.
- NOAA and FDA have been coordinating with the Governor's of the Gulf States and are working with all appropriate State Agencies to vet the sampling plan and implement a consistent State-Federal protocol.

NOAA Employees in the field

- NOAA has 110 people in the Gulf on travel orders supporting this spill. There are many others in regional offices supporting the spill.

Document ID: 0.7.19.1171.1

Received(Date): Fri, 14 May 2010 16:57:36 -0400
From: John Rapp <John.Rapp@noaa.gov>
Subject: NRT Meeting Notes- May 14 2010
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>,David Kennedy <David.Kennedy@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Below are the notes from the May 14, 11:00 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 14, 2010
11:00 PM

Situation Update:

- Dispersants were approved by all RRT members except LA, but monitoring will occur whenever sub-surface application is occurring. Parameters like DO will be measured to understand if damage is occurring and, if it is, to what extent.
- FOCS is working with the State of Louisiana to gain approval of the technique.
- Top Hat will be deployed today. The top kill, junk shot, and the replacement of the BOP are all still being pursued. Estimated date for the top kill to occur is May 18th.
- The relief well continues to be drilled. The BOP for the relief well does not seem to be from Cameron – the manufacturer of the failed BOP. Adm. Allen will check on this.

Communications:

- Continue to work closely with media.
- Big focus today is an NPR and NYT story which overplayed the estimate of the volume being discharged.

Legal Affairs:
The focus of DHS GC has shifted to:

1. Documenting fed costs related to the response
2. Getting ahead with federal social services
3. Coordinating with OLA on congressional hearings and the ongoing investigations

Inter-Governmental Affairs:

- Uncertainty on Governor's calls about the oil properties when they come ashore.
- Questions are being asked about who's getting hired and who isn't.
- NIC worked on the process in the UC on what may happen to maritime transport.

Congressional Affairs:

- Senate Appropriations Committee passed portions of the supplemental bill including $68 million for agencies and the ability for the USCG to make multiple requests of the OSLTF.
- Other portions of the supplemental like increased liability limits will be taken up on the floor.

Received(Date): Fri, 14 May 2010 17:34:59 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: RE: NRT Meeting Notes- May 14 2010
To: John Rapp <John.Rapp@noaa.gov>,_NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>,David Kennedy <David.Kennedy@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Hi all – in a meeting with boots this afternoon and apparently now there is more "interest" in the accuracy of our trajectories and why more of the oil is not showing up on shore. We will need more talkers on this. Thanks, MOnica

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Friday, May 14, 2010 4:58 PM
To: _NOAA HQ leadership; _HDQ Policy Contacts; _HDQ PCO Contacts; Sarri, Kristen; David Kennedy; _HQ Deep Water Horizon Staff
Subject: NRT Meeting Notes- May 14 2010

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Received(Date): Fri, 14 May 2010 17:37:59 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Re: NRT Meeting Notes- May 14 2010
To: Monica Medina <Monica.Medina@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Hi Monica,

These are the talking points we used today on this topic:

Why the Oil Has Not Reached Shore:

· In the first couple weeks after the spill, ocean currents and prevailing winds inhibited oil from moving towards the shore. Over the past week, the wind has changed and been more consistent out of the SE, and this has begun to push oil towards the shore.

· The currents are very complex in that area and eddies can influence oil movement.

· The effect of the wind on the oil is reduced when the oil is emulsified. This means that the wind will not move the oil as efficiently, so the southerly winds have less influence.

· Freshwater flowing from the Delta forms a convergence zone as it rides up over the sea water. The convergence zone collects oil and makes it necessary for the wind effect to be strong enough to "break through" the convergence effect to get the oil on shore.

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>
> Monica Medina
>
> Principal Deputy Under Secretary
>
> National Oceanic and Atmospheric Administration
>
> Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Friday, May 14, 2010 4:58 PM
To: _NOAA HQ leadership; _HDQ Policy Contacts; _HDQ PCO Contacts; Sarri, Kristen; David Kennedy; _HQ Deep Water Horizon Staff
Subject: NRT Meeting Notes- May 14 2010

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May 14, 2010
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Received(Date): Fri, 14 May 2010 21:05:46 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Re: Fw: Science opportunity from USGS
To: Sally Yozell <Sally.Yozell@noaa.gov>
Cc: "'David.Kennedy@noaa.gov'" <David.Kennedy@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'Jane.Lubchenco@noaa.gov'" <Jane.Lubchenco@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,Debbie Payton <Debbie.Payton@noaa.gov>,William Conner <William.Conner@noaa.gov>,Craig McLean <Craig.Mclean@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,Gary C Matlock <Gary.C.Matlock@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>,Zdenka S Willis <Zdenka.S.Willis@noaa.gov>,Paul Sandifer <Paul.Sandifer@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>,Steve Lehmann <Steve.Lehmann@noaa.gov>, Kate Clark <Kate.Clark@noaa.gov>

Sally,
Yes as part of the adaptive monitoring plan for subsea dispersant use we want to be able to track the location and biochemical fate of the oil, dispersants and dispersed oil. There are several people working on this at the NIC, Unified Command and RRT. In addition the groups we are standing up to coordinate science would be working this issue. Marcia refers to Debbie Payton below (OR&R Seattle) talking about BP bringing in APL gliders and the MBARI AUV. Debbie, Craig McLean, Steve Murawski, Gary Matlock, Zdenka Willis and others were on an e-mail dialog yesterday looking at the issue of physically mapping the plume as well as potential assets (private, academic and govt such as Navy gliders). Since many in this group have been in contact with Marcia, this loop may have already been closed but I will copy the group so this can be a point of discussion.
v/r
Dave

Sally Yozell wrote:
> From Marcia McNutt,
> Any ideas?
> Sally
>
> ----- Original Message -----
> From: Marcia K McNutt <mcnutt@usgs.gov>
> To: sally.yozell@noaa.gov <sally.yozell@noaa.gov>; jane.lubchenco@noaa.gov <jane.lubchenco@noaa.gov>
> Sent: Fri May 14 19:23:11 2010
> Subject: Fw: Science opportunity
>
>
> Trying again...
>
>
> ----- Original Message -----
> From: Marcia K McNutt
> Sent: 05/14/2010 06:59 PM EDT
> To: syozell@noaa.gov
> Cc: "Deanna Archuleta" <Deanna_Archuleta@ex.ios.doi.gov>; Judy Nowakowski
> Subject: Science opportunity
> Dear Sally:
>

> The Joint Incident Command for the Deepwater Horizon oil spill has
> identified the fate of released oil and dispersant in the deep sea as the
> biggest scientific unknown which leads to uncertainty in response
> scenarios. In my role as trying to coordinate a federal science response, I
> have been urging BP to get some oceanographic assets in the water to track
> the location and biochemical fate of the oil and dispersants in the deep
> sea. Based on the science requirements worked out with Debbie Payton at
> NOAA, BP is bringing in APL gliders and the MBARI AUV. (You recall last
> time we talked I tld you I had recommeded the Batelle vehicle - your former
> employer - but BP pursued the other option on account of the rating of
> sensors and AI.)
>
> Anyway, MBARI has no capacity to do any analytical work on the samples and
> because of my COI the Solicitor doesn't want USGS to get the samples.
> Because Batelle isn't involved seems to me that NOAA could take the Gulper
> samples and get the science from this experiment. It is too bad for USGS
> but a great opportunity for NOAA as this is likely to be THE most important
> science to come out of this mess. Let me know if NOAA can respond.
>
> Best,
> Marcia
>
>

Received(Date): Sat, 15 May 2010 07:02:10 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Talking points for Gov
To: "Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
Medina Talking Points for Gov Call, 05.15.doc

Jainey,

Here are talking points for the Govs mtg. I update the trajectory, loop current, status of subsea dispersant, why more oil hasn't reached shore, and the flow rate (took bullets from last nights Dr. L principles meeting TP)

If anything new comes up on the 8:00 call, I'll update this quickly and get it back to you.

Dave

Talking Points for Governors Call

Trajectory Status:

- Winds are forecast to shift from SE to ESE later today and persist through Sunday at 10-12 kts. The plume from the source will tend to move westward towards the Delta. Breton Sound and the Chandeleur Islands also have a potential for shoreline contacts throughout the forecast period.
- Isolated thunderstorms are possible today. But as a front approaches Sunday, showers and thunderstorm coverage will greatly increase. Storms will continue to be possible Sunday night and through Monday.
- Shoreline impacts continue to be light but a large slick remains offshore near the release site. Shoreline Cleanup Assessment Teams (SCAT) continued to conduct surveys of oiled shorelines. Yesterday SCAT Teams identified tar balls at Fourchon, and Grand Isle, and Trinity Island.

Impacts to Marine Mammals

- A total of 129 sea turtles have died since April 30. There are no visual observations of oil on turtles. Necropsy's are being conducted. This mortality rate is within the normal range of mortality.
- A total of 7 dolphins have died since April 30. Two were non-oil related. The remaining 5 are still under investigation.

Loop Current (IF ASKED):

- The latest estimates put the distance to the Loop Current at 35 miles south of the slick. This analysis uses the latest NESDIS satellite imagery which shows most of the slick moving northwest, with a thinner band of oil extending southward. The distance between the surface oil slick and the surface expression of the

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Loop Current has decreased from 50 miles yesterday, and nearly 90 miles a week ago.

- If oil reaches the Loop Current there is potential of oil being transported to the southern portion of Florida and then into the Gulf Stream. If this occurs, the oil might reach the Florida Straits as quickly as 8 to 10 days.
- During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and tar balls.
- NOAA will be tracking this closely to determine whether any oil becomes entrained.

Flow Rate Estimates (If Asked):

- NOAA is recommending to the Coast Guard that we use acoustic instruments deployed from a work ROV at the site to obtain accurate flow rate estimates.
- My science team has had extensive discussions today with Andy Bowen and Rich Camilli at the Woods Hole Oceanographic Institution (WHOI). WHOI was asked two weeks ago by BP to come up with a methodology, but BP subsequently shelved their proposal.
- They have discussed making multiple acoustic measurements to assess the degree of variability.
- Steve Murawski, one of our science leads on the response, will be having a detailed discussion with Adm. Nessinger later this evening.
- Additionally, NIST has volunteered their flow meteorology laboratory, and we see a role for them peer review of the results if we decide to go ahead with this procedure.
- We understand that there is a lot of interest in the release rate in the press right now. However, it's important to note that the

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response efforts have not been constrained by this estimate. Since within hours of the incident, NOAA has employed a relentless, "all hands on deck" approach, along with its federal partners. We will continue to deploy all our assets to sustain a robust response.

Barrier Island Proposal (IF ASKED):

- NOAA has long been supportive of the restoration of Louisiana's coastal ecosystem, particularly barrier islands.
- However, since this project is proposed as an oil spill response strategy, we believe that it should be evaluated by the Federal On-Scene Coordinator (FOSC) for its effectiveness in reducing the impact of oil should it make landfall. Should the FOSC decide that the project does achieve the response objectives, NOAA would urge consideration of ecological impacts, impacts to marine life, effectiveness, and the Natural Resource Damage Assessment process.
- Although the plan presently lacks sufficient detail to quantify potential impacts with certainty or precision, we have submitted preliminary and general comments and observations to the New Orleans District of the Corps.

Fisheries Closure:

- No changes were made to the boundaries of the fisheries closure area yesterday.
- NOAA will continue to provide daily updates at http://sero.nmfs.noaa.gov by 12 pm EST with any changes to the closed area effective as of 6 pm EST the same day.
- The six-hour window is meant to give fishermen time to retrieve their gear from an area that is about to close, and advance notice of areas that will soon open for fishing. A status message will be updated daily, even when closed area has not changed, and will

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- Changes to the area closed to all fishing will be based on the current location and trajectories of the oil spill, which are affected by wind speed and direction, currents, waves, and other weather patterns. Adjustments will take into account fisher and consumer safety, while keeping open those areas not affected by the oil spill.

Seafood Safety:

- Thank you, Governors, for sending us the names of senior officials to work with us on a consistent State-Federal seafood safety protocols. We have shared these names with FDA so that we can ensure maximum State-Federal collaboration and consistency.

Why has the more oil not come ashore? (If Asked)

- NOAA continues to look closely at this issue. Here are some factors that may be keeping more oil from coming ashore:
  - Oil on the water is moved by currents and winds. In the first couple weeks after the spill, the prevailing winds were variable. However, over the past week, the wind has changed and been more consistent out of the SE, and this has begun to push oil towards the shore. In addition, the currents are complex in that area and eddies can influence oil movement.
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Status of Subsea Dispersant (For Background)

- Dispersants were approved by all RRT members except LA. FOSC is working with LA to gain approval. However, the FOSC plans to proceed without LA on board.
- The final operational plan is being finalized. Charlie Henry (NOAA SSC) is ensuring that the plan reflect NOAA's position and objectives. Subsea injection may begin on Saturday.

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From: David Holst <David.Holst@noaa.gov>
Subject: Re: Talking points for Gov
Cc: "Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
Medina Talking Points for Gov Call, 05.15.doc

Made a couple of edits to the trajectory and dispersant based on the
8:00 call.

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- VADM Landry (FOSC) requested the use of the NOAA vessel Gordon Gunther for dispersant monitoring and sampling

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Received(Date): Sat, 15 May 2010 11:21:31 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: NRT Call Notes - May 15
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, Jen Pizza <Jen.Pizza@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>,William Conner <William.Conner@noaa.gov>, Mark Dix <Mark.Dix@noaa.gov>,Timothy Gallagher <timothy.gallagher@noaa.gov>

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National Response Team Call
May 15, 2010
11:00 AM

Situation Update

- No skimming operations conducted on 5/14 due to weather, skimming fleet stands-by
- No in-situ burning conducted on 5/14 operations due to weather
- Conditional approval for use of undersea dispersants; operations started shortly after 2:30 am
- Moving sampling vessel on scene to conduct sampling, did conduct air quality monitoring as operations began
- Riser insertion unsuccessful yesterday, was brought back to surface for work, targeting late afternoon (today) for follow-up try

Communications
Interagency press release regarding start of under-sea dispersant use should be completed and public today

Legal

- No update at this time
- Deputy Secretary Lute requested confirmation that a joint letter was dispatched, yes – went out last night, DOI had lead to dispatch (apologies no mention of the topic of this joint letter)

Inter-Governmental Affairs

- Continue governor and local calls, issues of interest include: Boom, wildlife reports, LA dredge concern
- State hired translators to translate information for other countries and communities

Congressional Affairs

- Congressman Taylor on flight today
- Chairman coming Monday/Tuesday for briefing
- Unified Command forwarded proposal for coordinated engagement of Congressional staff and members

Note from Deputy Secretary Lute

Daily updates on boom, use of dispersant, oil trajectory and fate of oil as it approaches the loop current are of high interest for DC --

Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Sat, 15 May 2010 17:54:05 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Unified Command Updates
To: Jane Lubchenco <Jane.Lubchenco@noaa.gov>,Margaret Spring <Margaret.Spring@noaa.gov>,Mary Glackin <Mary.Glackin@noaa.gov>, Monica Medina <Monica.Medina@noaa.gov>,Sally Yozell <Sally.Yozell@noaa.gov>
Cc: Lois Schiffer <Lois.Schiffer@noaa.gov>,Philip M Kenul <Philip.M.Kenul@noaa.gov>,Craig McLean <Craig.Mclean@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,William Conner <William.Conner@noaa.gov>,Robert Haddad <Robert.Haddad@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>,Steve Lehmann <Steve.Lehmann@noaa.gov>,Gary Shigenaka <Gary.Shigenaka@noaa.gov>,Demian Bailey <Demian.Bailey@noaa.gov>,"Michele A. Finn" <Michele.A.Finn@noaa.gov>,Brian Julius <Brian.Julius@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Gary C Matlock <Gary.C.Matlock@noaa.gov>,Paul Sandifer <Paul.Sandifer@noaa.gov>, Robert Pavia <Robert.Pavia@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, Jen Pizza <Jen.Pizza@noaa.gov>

Dr. Lubchenco,
We have been coordinating all day but wanted to give you updates that may be relevant for your call with the CG.
v/r
Dave

Updates on taskings from this morning involving the Unified Command

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clear with the Unified Command and FOSC what will be considered a response cost.

Dispersant Monitoring and Assessment Directive
for Subsurface Dispersant Application
May 10, 2010

Plume Monitoring and Assessment Plan for Subsurface Dispersant Application

BP shall implement the approved Dispersed Plume Characterization Plan for Subsurface Dispersant Application. Part 1 of the plan is a "Proof of Concept" to determine if subsurface dispersant operation is chemically dispersing the oil plume. Once the "Proof of Concept" test is complete, the results will be reviewed by the RRT for a decision to proceed or not proceed with Part 2 of the plan. Part 2 of the plan involves robust sampling to detect and delineate the dispersed plume Part 3, entitled "Subsurface Injection of Dispersant", outlines the operational procedures. Additional guidance will be provided by the RRT coordination group on specific implementation of this directive and that guidance will be considered an addendum to this directive.

At least 24 hours prior to the testing, use and/or application of any subsurface dispersants, BP shall provide a *Dispersant Application Plan* that identifies the dispersants to be used, describes the methods and equipment used to inject the dispersant, plume model to assure representative sampling, proposed method of visual observation, process for determining the effectiveness of subsurface injection, the specific injection rate (i.e., gallons/minute), the total amount to be used for the duration of the test, the total length of time that dispersant is injected, and the plan for sampling and monitoring, as approved by the Unified Command Environmental Unit. Dispersants must be on the approved product schedule and suitable for this use.

All data shall be provided to the United States Coast Guard (USCG) Federal On Scene Coordinator, and the Environmental Protection Agency (EPA) Regional Response Team (RRT) representative within 24 hours of the information being received. This data includes real time monitoring, laboratory analysis, documented observations, photographs, video, and any other information related to subsurface dispersant application.

BP shall conduct Part 1 monitoring and collect the data outlined below to determine dispersed plume concentration and transport. BP shall conduct Part 2 monitoring and collect the data outlined below, which will be sustained and more comprehensive, to address plume fate and effects on rotifers from the dispersed plume and chemical dispersants based on the results of Part 1 and iterative hydrodynamic modeling output.

Timing: BP shall commence Part 1 monitoring when subsurface application of dispersant is initiated. BP shall ensure that the R/V Brooks McCall or equivalent on location is outfitted, and manned before subsurface application commences.

Part 1

Document ID: 0.7.19.1336

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for Subsurface Dispersant Application – Addendum 1
May 14, 2010

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7. BP shall provide 48 hour advanced notice for departure and trip duration timelines to the FOSC and the EPA RRT Co chair.
8. Data reporting shall be conducted by BP on a daily basis. This reporting shall include a sample tracking table. Data reporting shall be provided by BP to the FOSC and the EPA RRT Co chair.

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BP shall design and implement a Part 1 monitoring plan to determine the factors needed to calculate dispersion effectiveness, namely, % oil, % water, % dispersant. This phase of sampling should determine the factors to predict buoyancy; namely droplet sizes, density (or specific gravity) along the thermal gradient of the water column, and kinematic viscosity.

Part 2

If Part 1 is successful and continuous subsea injection proceeds, BP shall design and implement a Part 2 monitoring plan to collect and report, on a daily basis, the data and information described below. BP shall submit this plan to the FOSC and EPA RRT Co Chair for approval and shall begin implementation upon notice from the Coast Guard and EPA. BP shall continue implementation of this plan until further notification from the Coast Guard and EPA. [1]

BP's monitoring plan shall include a more thorough oil analysis, to enable EPA to determine whether the dispersed plume is toxic to aquatic life. This plan shall be designed and implemented to determine whether the dispersed oil will hang in the water column and eventually come in contact with the benthos as it approaches land. BP has the option of conducting this particular monitoring and analysis as part of Part 1 if so desired.

PART 1 – Proof of Concept – Data Collection Requirement

- Towed Fluorometer at 1 meter
- LISST Particle Analysis at various intervals from surface to 550 meters
- Dissolved Oxygen at various intervals from surface to 550 meters
- CTD – Conductivity, Temperature, and Depth at various intervals from surface to 550 meters
- Water sampling from surface to 550 meters for PAH analysis
- Aerial Visual Observation (weather permitting)

PART 2 – Characterization Plan – Data Collection Requirement

- Cast Fluorometer – surface to sea floor
- LISST Particle Analysis at various intervals from surface to sea floor
- Dissolved Oxygen at various intervals from surface to sea floor
- CTD – Conductivity, Temperature, and Depth at various intervals from surface to sea floor
- Water sampling from surface to 550 meters for PAH analysis
- Aerial Visual Observation
- Rototox toxicity testing
- UV-Fluorescence testing to meet objectives in Appendix A

PART 3 – Subsurface Injection of Dispersant – Parameter Requirements

- Type of dispersant to be used
- Rate of dispersant injection

[1] See Appendix A for further background

Document ID: 0.7.19.1336.1

- Process for monitoring pumping rate
- Procedures for FOSC to start and stop injection

Evaluation Criteria to Determine Operational Shut-Down of Subsurface Sea Dispersant Application:

The Federal On-Scene Coordinator will immediately convene the Regional Response Team (RRT) when either of the following conditions is reported:

1. If there is a significant reduction in DO from background to below 2 mg/L; or

2. For Part 2, if EPA's interpretation of the toxicity test reveals excessive exertion of a toxic response. To determine a measurable toxic response, BP must first perform a rangefinder test since the collection of the sample will be directly from the toxic plume, and any sample from the plume will likely kill 100% of the test population. Therefore, the rangefinder must first be conducted to determine an order of magnitude dilution that gives a measurable response. Then, a more refined dilution procedure must be done to get the final LC50 answer. This result will be compared to a NOAA plume model that would predict when or where exertion of that toxic response would take place. EPA and NOAA will interpret the results of the toxicity tests to inform determination of a shutdown decision.

The RRT will evaluate the conditions above, in addition to all relevant factors including shoreline, surface water, and other human health and ecological impacts, to determine whether subsurface dispersant application should be shut down.

Limitations to Address

BP shall include in its monitoring plan provisions to address and minimize the impact of the following challenges:

1. Timely transport of samples to labs where necessary, which may be subject to weather and/or operational delays.
2. Sampling in the deep sea environment may pose challenges due to equipment limitations and malfunctions.

Quality Assurance and Sampling Plan Requirements

BP's plan shall include sample collection methodology, handling, chain of custody and decontamination procedures to ensure the highest quality data will be collected. Discrete samples shall be tested at an approved lab(s). Duplicate samples shall be tested. All samples (or as practicably possible) shall be archived for potential future analysis. Where technically possible, all samples shall be at least 100 ml.

BP shall include the following components and criteria in its Sampling Plan:

1. An Introduction, to include project objective and project staff
2. A brief site description and background

Document ID: 0.7.19.1336.1

3. A description of the Sampling Approach and Procedures, to encompass:
    a. A brief overview of sampling activities, data quality objectives, and health and safety implementation strategies (frequently, this references another specific document, but must be included).
    b. The actual sampling and/or monitoring approach, to ensure repeatability and consistent procedures. Describe sampling, monitoring, sampling and field QC procedures, spoil or waste disposal procedures resulting from this effort, as well as specimen/data handling issues.
    c. Sample management – how the sample will be procured, handled, and delivered
    d. Sample instructions- preservation, containers, and hold times

4. The analytical approach – what lab tests will be run, any special instructions, how the data will be verified, and how data will be reported.
5. Quality Assurance- custody procedures, field records including logs, chain of custody, qualitative data handling including photographs.

Special Monitoring of Applied Response Technologies ("SMART") Protocol for Surface Application of Dispersants

BP shall immediately implement the Special Monitoring of Applied Response Technologies ("SMART") Protocol (attached as Appendix B) at the Tier III level for surface application of dispersants. Results from Tier III monitoring must be shared with the Area Command Environmental Unit. If Tier III is not deemed to be sufficient, further direction will be provided.

Document ID: 0.7.19.1336.1

Appendix A –Background for Part 1I Methodology for Informational Purposes

The fact that many organic compounds fluoresce at specific excitation and emission wavelengths is the basis for identifying many of the components of crude oil in seawater. When subject to excitation at 245-280 nm, polycyclic aromatic hydrocarbons (PAH) fluoresce over wavelengths of 310 to > 400 nm, depending on the number of aromatic rings in the structure. Only one group has examined the 2D UV Fluorescence Spectroscopy (UVFS) spectra of oil treated with chemical dispersants, the Ken Lee group at Fisheries and Oceans Canada (DFO). They found that a fixed excitation wavelength of 280 nm works best for fluorescence of PAHs in crude oil, and two different emission wavelengths, one at 340 nm for 1-and 2-ring PAHs and the other at 445 nm for 3-ring and higher PAHS, provide an excellent fingerprint for differentiating chemically dispersed oil from non-dispersed oil. As oil gets dispersed due to the action of a chemical dispersant, the peak height at 445 nm becomes highly pronounced relative to the peak height at 340 nm. Thus, computing the ratio of peak height at 340 to the peak height at 445 gives a direct measurement of the degree of dispersion that has taken place as a result of applying a dispersant to an oil.

The effect of oil dispersion on UVFS spectra can be expressed in terms of an emission ratio, so that dispersion can be tracked without having to measure oil concentration. The spectral changes associated with the application of dispersant can also be calibrated to quantify increasing oil or oil plus dispersant. The fact that UVFS and UVA data are comparable at an emission intensity of 445 nm or over the whole spectrum of intensities (from 300 - 500 nm) indicates that the fate of higher molecular weight (> 3-ring) PAH fractions - the more "dispersible" fraction of an oil slick - will provide a good idea of the fate of the oil as a whole during the dispersion process. Given that higher molecular weight PAHs may be associated with many of the persistent (or chronic) toxic effects of crude oils on marine organisms, the ability of UVFS to track "dispersible" fractions would make it a particularly useful tool in studies of the long-term toxic effects of dispersed oil.

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Received(Date): Sat, 15 May 2010 18:06:42 -0400
From: Jane Lubchenco <Jane.Lubchenco@noaa.gov>
Subject: RE: Unified Command Updates
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>,Margaret Spring <Margaret.Spring@noaa.gov>,Mary Glackin <Mary.Glackin@noaa.gov>, Monica Medina <Monica.Medina@noaa.gov>,Sally Yozell <Sally.Yozell@noaa.gov>
Cc: Lois Schiffer <Lois.Schiffer@noaa.gov>,Philip M Kenul <Philip.M.Kenul@noaa.gov>,Craig McLean <Craig.Mclean@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,William Conner <William.Conner@noaa.gov>,Robert Haddad <Robert.Haddad@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>,Steve Lehmann <Steve.Lehmann@noaa.gov>,Gary Shigenaka <Gary.Shigenaka@noaa.gov>,Demian Bailey <Demian.Bailey@noaa.gov>,"Michele A. Finn" <Michele.A.Finn@noaa.gov>,Brian Julius <Brian.Julius@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Gary C Matlock <Gary.C.Matlock@noaa.gov>,Paul Sandifer <Paul.Sandifer@noaa.gov>, Robert Pavia <Robert.Pavia@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, Jen Pizza <Jen.Pizza@noaa.gov>

Thanks Dave and all – this is very helpful! I appreciate everyone's work on this!

jane

From: Dave.Westerholm [mailto:Dave.Westerholm@noaa.gov]
Sent: Saturday, May 15, 2010 5:54 PM
To: Jane Lubchenco; Margaret Spring; Mary Glackin; Monica Medina; Sally Yozell
Cc: Lois Schiffer; Philip M Kenul; Craig McLean; John Oliver; Steve Murawski; William Conner; Robert Haddad; Charlie Henry; Mark W Miller; Steve Lehmann; Gary Shigenaka; Demian Bailey; Michele A. Finn; Brian Julius; _HQ Deep Water Horizon Staff; Gary C Matlock; Paul Sandifer; Robert Pavia; David Kennedy; Jen Pizza
Subject: Unified Command Updates

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Received(Date): Sun, 16 May 2010 08:16:58 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: I can put governor tps together
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>
Medina Talking Points for Gov Call, 05.16.doc

Here is the update trajectory, why oil hasn't hit shore, and dispersants

Dave

Jainey.Bavishi wrote:
> Dave, will you send me trajectory, etc. and I can go from there?
>
> Thanks,
> Jainey

Talking Points for Governors Call

Trajectory Status:

- Winds are forecast to be predominantly from the SE over the next few days, becoming progressively weaker (≤5 kts by Monday). Trajectory models predict westward movement of the oil towards the Delta, with some of the oil moving to the west of the Delta. As the winds weaken, models indicate the plume will begin moving to the SW. The latest information still shows the oil threatening shorelines from Atchafalaya Bay, the Mississippi River Delta, and Breton Sound and Chandeleur Islands in Louisiana to Mississippi shorelines.
- A good chance of isolated thunderstorms is possible through Monday. After that, isolated to scattered showers will be possible each day through the week.
- Reports of oiled shorelines in Louisiana includes: the barrier islands off Terrebonne & Caillou Bays, Grand Isle, Fourchon, South Pass, Blind Bay near Pass a Loutre, and the Chandeleur Islands. In Mississippi, reports of oiled shorelines include Horn Island and Long Beach. In Alabama, Dauphin Island has had light oiling in the form of tarballs.

Loop Current (IF ASKED):

- The latest estimates put the distance to the Loop Current at approximately 3-20 miles south of the slick. This analysis uses the latest NESDIS satellite imagery which shows most of the slick moving northwest, with a thinner band of oil extending southward. The slick and the loop current are dynamic.

Document ID: 0.7.19.1003.1

- If oil reaches the Loop Current there is potential of oil being transported to the southern portion of Florida and then into the Gulf Stream. If this occurs, the oil might reach the Florida Straits as quickly as 8 to 10 days.
- During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and tar balls.
- NOAA will be tracking this closely to determine whether any oil becomes entrained.

Flow Rate Estimates (IF ASKED):

- We understand that there is a lot of interest in the release rate in the press right now. However, it's important to note that the response efforts have not been constrained by this estimate. Since within hours of the incident, NOAA has employed a relentless, "all hands on deck" approach, along with its federal partners. We will continue to deploy all our assets to sustain a robust response.

Why Oil Has Not Reached Shore:

- NOAA continues to look closely at this issue. This spill is unique in many ways. Some factors include: the nearshore oil may be sinking when mixed with river sediment; and the weathered oil may be near neutrally buoyant, therefore any wave energy overwashes it and makes it spend most of the time in the water and sheltered from the force of the wind.

Fisheries Closure:

Document ID: 0.7.19.1003.1

- The boundaries of the closed area were amended Friday. The NW boundary was retracted and the SW boundary was extended.
- The total closed area is 19,377 square miles or 8% of Federal Gulf of Mexico waters. This is slightly larger than the previous closed area which covered 7.3% of Federal Gulf of Mexico waters.
- NOAA will continue to provide daily updates at http://sero.nmfs.noaa.gov by 12 pm EST with any changes to the closed area effective as of 6 pm EST the same day.
- The six-hour window is meant to give fishermen time to retrieve their gear from an area that is about to close, and advance notice of areas that will soon open for fishing. A status message will be updated daily, even when closed area has not changed, and will also be available on NOAA Weather Radio and by calling NOAA Fisheries Southeast Regional Office at 727-824-5305.
- Changes to the area closed to all fishing will be based on the current location and trajectories of the oil spill, which are affected by wind speed and direction, currents, waves, and other weather patterns. Adjustments will take into account fisher and consumer safety, while keeping open those areas not affected by the oil spill.

Impacts to Marine Mammals:

- A total of 133 dead sea turtles have been found since April 30. There are no visual observations of oil on turtles. Necropsy results have come back on 80 turtles, and there has been no evidence of oiling. This mortality rate is within the normal range for this season

Document ID: 0.7.19.1003.1

- A total of 8 dead dolphins have been found since April 30. Two were confirmed to be non-oil related. The remaining 6 are still under investigation.

Status of Subsea Dispersant:

For your background only:

- Dispersants were approved by all RRT members except the State of Louisiana. FOSC is working with Louisiana to gain approval. However, the FOSC plans to proceed without Louisiana on board. The final operational plan is being finalized. Charlie Henry (NOAA SSC) is ensuring that the plan reflect NOAA's position and objectives. VADM Landry (FOSC) requested the use of the NOAA vessel Gordon Gunther for dispersant monitoring and sampling.
- Undersea dispersant application resumed today for several hours. Operations were stopped when the Riser Insertion Tube operations started in the afternoon.

Dredging Proposal (IF ASKED):

Background: The White House circulated Administration-wide talking points on the dredging proposal which are included here.

- The dredging proposal submitted to the USACE by the State of LA is currently undergoing expedited review for engineering and environmental feasibility in coordination with NOAA, EPA, DOI, USDA and other affected federal, state, local and tribal entities.
- Once the proposal review is complete, the Federal On-Scene Coordinator, with advice from the National Incident Commander and input from BP as the responsible party, will assess the proposal's effectiveness in mitigating oil damages and decide whether to go forward with the proposal.

Document ID: 0.7.19.1003.1

- The ongoing Administration-wide response organization shares the State and local interest in a quick decision.

Document ID: 0.7.19.1003.1

Received(Date): Sun, 16 May 2010 08:37:25 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: NYT article on plume
To: "Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
image001.png

May 15, 2010

Giant Plumes of Oil Found Forming Under Gulf of Mexico

By **JUSTIN GILLIS**

Scientists are finding enormous oil plumes in the deep waters of the Gulf of Mexico, including one as large as 10 miles long, 3 miles wide and 300 feet thick in spots. The discovery is fresh evidence that the leak from the broken undersea well could be substantially worse than estimates that the government and BP have given.

"There's a shocking amount of oil in the deep water, relative to what you see in the surface water," said Samantha Joye, a researcher at the University of Georgia who is involved in one of the first scientific missions to gather details about what is happening in the gulf. "There's a tremendous amount of oil in multiple layers, three or four or five layers deep in the water column."

The plumes are depleting the oxygen dissolved in the gulf, worrying scientists, who fear that the oxygen level could eventually fall so low as to kill off much of the sea life near the plumes.

Dr. Joye said the oxygen had already dropped 30 percent near some of the plumes in the month that the broken oil well had been flowing. "If you keep those kinds of rates up, you could draw the oxygen down to very low levels that are dangerous to animals in a couple of months," she said Saturday. "That is alarming."

The plumes were discovered by scientists from several universities working aboard the research vessel Pelican, which sailed from Cocodrie, La., on May 3 and has gathered extensive samples and information about the disaster in the gulf.

Scientists studying video of the gushing oil well have tentatively calculated that it could be flowing at a rate of 25,000 to 80,000 barrels of oil a day. The latter figure would be 3.4 million gallons a day. But the government, working from satellite images of the ocean surface, has calculated a flow rate of only 5,000 barrels a day.

BP has resisted entreaties from scientists that they be allowed to use sophisticated instruments at the ocean floor that would give a far more accurate picture of how much oil is really gushing from the well.

"The answer is no to that," a BP spokesman, Tom Mueller, said on Saturday. "We're not going to take any extra efforts now to calculate flow there at this point. It's not relevant to the response effort, and it might even detract from the response effort."

The undersea plumes may go a long way toward explaining the discrepancy between the flow estimates, suggesting that much of the oil emerging from the well could be lingering far below the sea surface.

The scientists on the Pelican mission, which is backed by the National Oceanic and Atmospheric Administration, the federal agency that monitors the health of the oceans, are not certain why that would be. They say they suspect the heavy use of chemical dispersants, which BP has injected into the stream of oil emerging from the well, may have broken the oil up into droplets too small to rise rapidly.

BP said Saturday at a briefing in Robert, La., that it had resumed undersea application of dispersants, after winning Environmental Protection Agency approval the day before.

"It appears that the application of the subsea dispersant is actually working," Doug Suttles, BP's chief operating officer for exploration and production, said Saturday. "The oil in the immediate vicinity of the well and the ships and rigs working in the

area is diminished from previous observations."

Many scientists had hoped the dispersants would cause oil droplets to spread so widely that they would be less of a problem in any one place. If it turns out that is not happening, the strategy could come under greater scrutiny. Dispersants have never been used in an oil leak of this size a mile under the ocean, and their effects at such depth are largely unknown.

Much about the situation below the water is unclear, and the scientists stressed that their results were preliminary. After the April 20 explosion of the Deepwater Horizon, they altered a previously scheduled research mission to focus on the effects of the leak.

Interviewed on Saturday by satellite phone, one researcher aboard the Pelican, Vernon Asper of the University of Southern Mississippi, said the shallowest oil plume the group had detected was at about 2,300 feet, while the deepest was near the seafloor at about 4,200 feet.

"We're trying to map them, but it's a tedious process," Dr. Asper said"Right now it looks like the oil is moving southwest, not all that rapidly."

He said they had taken water samples from areas that oil had not yet reached, and would compare those with later samples to judge the impact on the chemistry and biology of the ocean.

While they have detected the plumes and their effects with several types of instruments, the researchers are still not sure about their density, nor do they have a very good fix on the dimensions.

Given their size, the plumes cannot possibly be made of pure oil, but more likely consist of fine droplets of oil suspended in a far greater quantity of water, Dr. Joye said. She added that in places, at least, the plumes might be the consistency of a thin salad dressing.

Dr. Joye is serving as a coordinator of the mission from her laboratory in Athens, Ga. Researchers from the University of Missi ssippi and the University of Southern Mississippi are aboard the boat taking samples and running instruments.

Dr. Joye said the findings about declining oxygen levels were especially worrisome, since oxygen is so slow to move from the surface of the ocean to the bottom. She suspects that oil-eating bacteria are consuming the oxygen at a feverish clip as they work to break down the plumes.

While the oxygen depletion so far is not enough to kill off sea life, the possibility looms that oxygen levels could fall so low as to create large dead zones, especially at the seafloor. "That's the big worry," said Ray Highsmith, head of the Mississippi center that sponsored the mission, known as the National Institute for Undersea Science and Technology.

The Pelican mission is due to end Sunday, but the scientists are seeking federal support to resume it soon.

"This is a new type of event, and it's critically important that we really understand it, because of the incredible number of oil platforms not only in the Gulf of Mexico but all over the world now," Dr. Highsmith said. "We need to know what these events are like, and what their outcomes can be, and what can be done to deal with the next one."

Shaila Dewan contributed reporting from Robert, La.

—

Close

Document ID: 0.7.19.514

Received(Date): Sun, 16 May 2010 12:38:46 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: NRT Meeting Notes for May 16
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>, Policy.Contacts@noaa.gov,PCO.Contacts@noaa.gov, "Deepwater NOAA Support (dwh.staff@noaa.gov)"<dwh.staff@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>,David Kennedy <David.Kennedy@noaa.gov>

Below are the notes from the May 16, 11:00 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 16, 2010
11:00 PM

Situation Status:

- The riser tube was inserted last night. Began to get fluid up to the vessel this morning. However, the ROV used for subsea dispersants hit and dislodged the riser tube this morning. The have re-inserted the tube and think they will get flow within the next several hours.
- No in-situ burn or skimming scheduled today due to weather conditions
- 23 air sorties for surface dispersants scheduled today (560,000 gallons of dispersants applied to date)
- The loop current is 20 or fewer miles from the plume. Greater probability of oil entrained in the loop current. If entrained, it will be heavily diluted and weathered.
- 1.7 million feet of boom have been deployed
- There is a lot of uncertainty of where the oil is in the water column. This is an issue we need to get a better handle on--where is the oil and where may it be going. Research crews from MS and LA universities are looking to characterize the subsurface oil. They were quoted in a NY Times article this morning.

Communications

- Working on talking points to address the NY Times article and inaccuracies in the article
- Updated loop current talking points are being reviewed by OMB

Legal:

- Secretaries Salazar and Napolitano sent a letter to BP requesting clarification that BP will not in any way seek to rely on the potential $75 million statutory cap to refuse to provide compensation to any individuals or others harmed by the oil spill, even if more than $75 million is required to provide full compensation to all claimants, and BP will not seek reimbursement from the American taxpayers, the United States Government, or the Oil Spill Liability Trust Fund for any amount.
- Developing a guidance memo on issues pertaining to FOIA, document preservation, etc.

Intergovernmental:

- Working on translating material in Vietnamese.
- 13,000 claims against BP are open. Approximately $8M has been dispersed, mostly for loss of income. Many of these claims remain open so applicants do not need to re-apply. BP has 300 adjusters in the field and 12 claims centers.
- Disasterassistance.gov has been developed to provide information on various assistance and services

Congressional

- A number of hearing this week
- OMB is organizing the agencies to brief Congress on legislative proposal

Received(Date): Sun, 16 May 2010 15:29:11 -0400
From: Brian Pawlak <Brian.T.Pawlak@noaa.gov>
Subject: Timeline....[Fwd: Re: 0800 Tasks]
To: John Rapp <John.Rapp@noaa.gov>
Cc: Lauren B Lugo <Lauren.B.Lugo@noaa.gov>
Re: 0800 Tasks.eml

Rapp..for your eyes only at this point. Given our conversation from yesterday, how does this look?

Received(Date): Sun, 16 May 2010 15:01:30 -0400
From: Lauren.B.Lugo@noaa.gov
Subject: Re: 0800 Tasks
To: Nancy.Thompson@noaa.gov
Cc: Brian Pawlak <Brian.T.Pawlak@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>, John Oliver <John.Oliver@noaa.gov>
Timeline of NOAA FisheriesSeafood Safety Response.docx

Attached is version with the addition Nancy suggested. NOAA leadership and DOC will surely continue to ask for more information about our future plans for sample collection and analysis and the results of the analysis as well as want to discuss whether we can keep up with the tempo depending on how long the problem persists. But, hopefully this will give them a better idea of what has occurred to date.

Brian and JO, Unless you want revisions, let me know how you want this to be submitted downtown. Lauren

----- Original Message -----
From: Nancy.Thompson@noaa.gov
Date: Sunday, May 16, 2010 10:52 am
Subject: Re: 0800 Tasks
To: Lauren.B.Lugo@noaa.gov
Cc: Brian Pawlak <Brian.T.Pawlak@noaa.gov>, Steve Murawski <Steve.Murawski@noaa.gov>, John Oliver <John.Oliver@noaa.gov>

> Hi Lauren, I can only comment on the timeline since I've been
> involved; you can add that on May 15 the SEFSC deployed a contracted
> fishing vessel to initiate sampling and collection of samples for
> seafood safety analyses with emphasis in area considered for opening
> in federal waters. ----- Original Message -----From:
> Lauren.B.Lugo@noaa.gov Date: Sunday, May 16, 2010 9:31 am Subject: Re:
> 0800 Tasks > Attached is my first cut at the timeline of NOAA
> Fisheries Seafood

> > Safety Response Activities. I don't really have any information

> > about activities on vessels in this timeline because I don't have

> > that information readily available. Steve and Nancy, Are there

> > any significant items not captured here that you would like to

> > add? This was requested by DOC on the 8:00am call yesterday. Lauren
>

> >

> > ----- Original Message -----

> > From: Brian Pawlak <Brian.T.Pawlak@noaa.gov>

> > Date: Sunday, May 16, 2010 9:24 am

> > Subject: 0800 Tasks

> > To: John Oliver <John.Oliver@noaa.gov>

> > Cc: Lauren B Lugo <Lauren.B.Lugo@noaa.gov>, Steve Murawski

> > <Steve.Murawski@noaa.gov>

> >

> > > * I am calling Ralph to push the request for dispersant...

> > > * I will look at how to make stranding tables more clearly
> > understood...so we can hopefully

Timeline of Significant NOAA Fisheries Seafood Safety Response Activities

May 16, 2010

4/22 Deepwater Horizon oil rig sank; Oil spill discovered

4/23 NOAA Fisheries began discussing plans to monitor the spill and conduct seafood assessments

4/29 NMFS formed an internal and informal Seafood Safety Team to coordinate response activities related to seafood safety between the offices and programs with necessary capabilities

4/30 Seafood Safety Team began to discuss general plan of action, budget needs, and fishery closure and re-opening strategies from a seafood safety perspective

Seafood Inspection sent specifications (types, quantities) of baseline samples to Science Center for collection and to the Inspection Laboratory in Pascagoula for procurement

Seafood Inspection identified internal expert sensory assessors, began to make arrangements for sensory harmonization session, completed the development of the curriculum for sensory sessions, and contacted FDA counterparts to invite FDA participation in session. (Session will take place May 17)

Northwest Fishery Science Center began to assess capacity for chemical analysis and made arrangements to receive and process samples once available.

5/2 Seafood Safety Team began developing the protocol for reopening fisheries in consultation with FDA

5/3 First scientist from the Northwest Fishery Science Center traveled to Pascagoula, MS to coordinate with Southeast Center and Inspection Laboratory scientists on near-term strategic planning for sample collection and handling.

Inspection Laboratory began to receive baseline samples of finfish, crab, shrimp, and collected in the field by the Southeast Center, Dauphin Island Sea Lab, and Grand Bay National Estuarine Research Reserve.

Inspection Laboratory staff began to procure commercially available crabs, shrimp, and oysters as well as supplies needed for sample processing, storage, and shipment.

Inspection laboratory re-located two large walk in freezers to accommodate storage of the volume of oil-spills related samples

5/4 Seafood Inspection decided to host the sensory harmonization session for expert assessors to NOAA's state of the art sensory laboratory in Gloucester, MA rather than Pascagoula due to reports of oil scented air in the Pascagoula.

Seafood Safety Team participated in a conference call to continue to coordinate with FDA on the development of re-opening protocol.

Northwest Center staff made arrangements with NOAA NCCOS to share samples for inter-laboratory comparisons of chemical analyses.

5/5 Seafood Safety Team coordinated with NOAA's National Ocean Service NCCOS Mussel Watch Program to expand the harvest areas to include Florida and Texas and to share existing data for pre-spill comparisons.

5/6 Seafood Safety Team participated in a conference call hosted by the FDA with State food agency officials. NOAA provided guidance documents to State officials on sample collection and handling procedures.

Three additional scientists from the Northwest Center traveled to Pascagoula to assist with sample collection, processing and handling. The Center made arrangements with the Alaska Fishery Science Center to ready the Auke Bay lab to assist with chemical analysis.

Northwest Center continued to expand the analytical and quality assurance capacity at the Montlake Facility in Seattle with the reemployment of two recently retired scientists.

Dr. Lubchenco, Eric Schwaab, and other NOAA leaders visited the Pascagoula laboratory to participate in sample collection activities and to view a sample processing demonstration.

5/7 NOAA leadership assigned Dr. Nancy Thompson to lead the seafood assessment efforts.

Seafood Inspection began discussing with Dr. Steve Otwell of the University of Florida to assist with the delivery of State sensory courses to be held after the sensory harmonization session for expert assessors.

Laboratory staff processed oysters, snapper, grouper and other baseline samples. More than 500 baseline samples were in storage at the Inspection Laboratory at this point.

5/8 Baseline sample analysis continued including additional samples collected near Dauphin Island, the Chandeleur Islands, and five additional site in Mississippi and additional species including red drum. The baseline data will be compared to data collected following hurricane Katrina.

Laboratory staff initiated the process with the National Institute of Standards and Technology (NIST) to archive baseline samples for future use.

5/9 Two sensory experts from the Seafood Inspection Program arrived in Pascagoula to prepare the samples for the sensory harmonization session.

Seafood Safety Team assisted NOAA OR&R with sampling and analysis that may have relevance for fish injury assessment under the Natural Resources Damage Assessment (NRDA).

Seafood Safety Team acquired samples of DWH oil for chemical and sensory analysis.

5/12 NOAA Fisheries submitted the work plan for its Seafood Surveillance and Monitoring Program to NOAA headquarters along with the Protocol for re-opening fisheries which was agreed to by the FDA.

Dr. Nancy Thompson traveled to Pascagoula to lead the implementation of NOAA's seafood surveillance and monitoring efforts from the ground.

5/13 Final baseline samples (shrimp and crab) arrived in Pascagoula. Chemical analysis of all baseline samples is ongoing.

Laboratory scientists worked with NOAA Law Enforcement personnel on evidentiary handling procedures. Chain of custody documentation is being maintained for all samples.

5/14 Seafood Safety Team members participated in a call hosted by FDA with State food agency officials. FDA provided a draft copy of the protocol for re-opening fisheries to aid the discussion with States. The States will follow the same protocol for re-opening State water fisheries.

Laboratory scientists provided training and technical assistance to various FDA laboratories regarding methodological protocols to assess polycyclic aromatic hydrocarbons in tissues of seafood products.

5/15 The Southeast Center deployed a contracted fishing vessel to initiate sampling and collection of samples for seafood safety analyses with emphasis in areas in Federal waters under consideration for opening.

5/17 Sensory harmonization session to be held in Gloucester, MA. Following the session, expert assessors will travel to the Gulf Coast to train a larger cadre of State assessors and to be available to analyze samples.

Note: NOAA's "Seafood Safety Team" primarily includes representatives from the Seafood Inspection Program, National Seafood Inspection Laboratory, Northwest Fishery Science Center, and Southeast Fishery Science Center. Dr. Nancy Thompson is on travel to Pascagoula, MS to lead the implementation of NOAA's seafood surveillance and monitoring efforts.

Attached is version with the addition Nancy suggested. NOAA leadership and DOC will surely continue to ask for more information about our future plans for sample collection and analysis and the results of the analysis as well as want to discuss whether we can keep up with the tempo depending on how long the problem persists. But, hopefully this will give them a better idea of what has occurred to date.

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Cc: Brian Pawlak <Brian.T.Pawlak@noaa.gov>, Steve Murawski <Steve.Murawski@noaa.gov>, John Oliver <John.Oliver@noaa.gov>

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Received(Date): Sun, 16 May 2010 18:10:16 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Re: Hot topics from today
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>

Jainey,

Certainly the loop current. Dr. L is well up to speed on that one. We're putting together a one-pager and talking points/Q&A's.

Also could mention that NOAA is happy that the subsea dispersants monitoring plan includes biological/ecological impacts as well as efficacy of dispersant.

Dave

Jainey.Bavishi wrote:
> John and Dave,
>
> Are there any hot topics that you think Dr. L would want to discuss on
> the 6:45 principals call? Seems like the biggest things are:
>
> -messaging around loop current
> -subsurface analysis (not sure where we are at on this one)
>
> Anything else?
>
> Jainey

Received(Date): Sun, 16 May 2010 18:39:19 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: TALKING POINTS FOR PRINCIPALS CALL
To: Jane.Lubchenco@noaa.gov, "'Amrit.Mehra@noaa.gov'" <Amrit.Mehra@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Dr. L Talking Points for Principal's Call, 05.16.doc

Dr. Lubchenco,

Below are some talking points that may be helpful for your 6:45 Principals call.

Best,
Jainey

Talking Points for Principal's Call

Loop Current:

The latest estimates put the distance to the Loop Current at approximately 3-20 miles south of the slick. Our analysis uses the latest NESDIS satellite imagery which shows most of the slick moving northwest, with a thinner band of oil extending southward. The slick and the loop current are dynamic.

If oil reaches the Loop Current there is potential of oil being transported to the southern portion of Florida and then into the Gulf Stream. If this occurs, the oil might reach the Florida Straits as quickly as 8 to 10 days.

During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and tar balls.

NOAA will be tracking this closely to determine whether any oil becomes entrained. Each day scientists are looking at drifting buoys and other instruments dropped in the slick area (by NOAA P-3 aircraft and by ships) and in between the slick and the Loop Current, satellite images (sea surface height and temperature), numerical models and data coming in from government, academic and industry vessels transiting between the southern part of the slick and the Loop Current.

In anticipation of a potential change in the top of the Loop Current, this week additional instruments will be deployed to look at the structure and velocity of the Loop Current. New missions to track the extent of oil and dispersants in surface and deep waters will be initiated.

We are also working on messaging about what it means for oil to enter the loop current. We are currently developing a one-pager, talking points and Q&As. A critical component of the messaging is to convey that the oil that enters the loop current will be weathered, diluted and composed of mostly tarballs and where the most likely impacts would be.

New York Times Article on Pelican Cruise:

Today, we had a call with the scientists aboard the Pelican cruise that was covered by the New York Times today.

They admitted that they only had preliminary information, and they did not qualify their statements to the New York Times properly. They stated that they did not mean to infer that there were plumes of oil. In fact, they were not even sure that they were looking at oil.

They have collected water samples, which will take 10 days to analyze. None of the samples had visible oil.

Our Director of Communications, in coordination with the EPA, is working with the New York Times to print a retraction.

Subsea Dispersant Monitoring Plan:

NOAA is pleased to see that monitoring plan for the use of subsea dispersant includes efficacy of dispersant and biological and ecological impacts.

Talking Points for Principal's Call

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Document ID: 0.7.19.1338.1

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Subsea Dispersant Monitoring Plan:

- NOAA is pleased to see that monitoring plan for the use of subsea dispersant includes efficacy of dispersant and biological and ecological impacts.

Document ID: 0.7.19.1338.1

Received(Date): Sun, 16 May 2010 18:44:31 -0400
From: Jane Lubchenco <Jane.Lubchenco@noaa.gov>
Subject: RE: TALKING POINTS FOR PRINCIPALS CALL
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>,"'Amrit.Mehra@noaa.gov'" <Amrit.Mehra@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Thanks!

From: Jainey.Bavishi [mailto:Jainey.Bavishi@noaa.gov]
Sent: Sunday, May 16, 2010 6:39 PM
To: jane.lubchenco@noaa.gov; 'Amrit.Mehra@noaa.gov'; Spring, Margaret; 'dwh.staff@noaa.gov'
Subject: TALKING POINTS FOR PRINCIPALS CALL

Dr. Lubchenco,

Below are some talking points that may be helpful for your 6:45 Principals call.

Best,
Jainey

Talking Points for Principal's Call

Loop Current:

The latest estimates put the distance to the Loop Current at approximately 3-20 miles south of the slick. Our analysis uses the latest NESDIS satellite imagery which shows most of the slick moving northwest, with a thinner band of oil extending southward. The slick and the loop current are dynamic.

If oil reaches the Loop Current there is potential of oil being transported to the southern portion of Florida and then into the Gulf Stream. If this occurs, the oil might reach the Florida Straits as quickly as 8 to 10 days.

During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and tar balls.

NOAA will be tracking this closely to determine whether any oil becomes entrained. Each day scientists are looking at drifting buoys and other instruments dropped in the slick area (by NOAA P-3 aircraft and by ships) and in between the slick and the Loop Current, satellite images (sea surface height and temperature), numerical models and data coming in from government, academic and industry vessels transiting between the southern part of the slick and the Loop Current.

In anticipation of a potential change in the top of the Loop Current, this week additional

instruments will be deployed to look at the structure and velocity of the Loop Current. New missions to track the extent of oil and dispersants in surface and deep waters will be initiated.

We are also working on messaging about what it means for oil to enter the loop current. We are currently developing a one-pager, talking points and Q&As. A critical component of the messaging is to convey that the oil that enters the loop current will be weathered, diluted and composed of mostly tarballs and where the most likely impacts would be.

New York Times Article on Pelican Cruise:

Today, we had a call with the scientists aboard the Pelican cruise that was covered by the New York Times today.

They admitted that they only had preliminary information, and they did not qualify their statements to the New York Times properly. They stated that they did not mean to infer that there were plumes of oil. In fact, they were not even sure that they were looking at oil.

They have collected water samples, which will take 10 days to analyze. None of the samples had visible oil.

Our Director of Communications, in coordination with the EPA, is working with the New York Times to print a retraction.

Subsea Dispersant Monitoring Plan:

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Received(Date): Sun, 16 May 2010 18:46:08 -0400
From: Jane Lubchenco <Jane.Lubchenco@noaa.gov>
Subject: RE: TALKING POINTS FOR PRINCIPALS CALL
To: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>,"'Amrit.Mehra@noaa.gov'" <Amrit.Mehra@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Please note that the Pelican scientist will be asking the NYT to do a correction, not a retraction -

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Subsea Dispersant Monitoring Plan:

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Received(Date): Mon, 17 May 2010 11:45:07 -0400
From: Justin Kenney <Justin.kenney@noaa.gov>
Subject: Pelican LTE to NYTimes
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,"Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,"dave.westerholm@noaa.gov" <Dave.Westerholm@noaa.gov>,Craig McLean <Craig.Mclean@noaa.gov>, 'Jana Goldman' <Jana.Goldman@noaa.gov>
image001.png

Here is the letter to the editor the *Pelican* scientists sent to the NYTimes last night. Expect a statement from Dr. Lubchenco on this subject soon.

Editor

New York Times

Subject: Correction/clarification of today's article entitled "Giant Plumes of Oil Forming Under the Gulf"

Dear Editor:

Today's story about the Deepwater Horizon accident in the Gulf of Mexico included information and quotes from us about our efforts to collect data on dispersal of the oil. Instruments we deployed did detect the presence of layers in deep water that could be oil but laboratory analyses of water samples collected on site must be completed before definitive statements can be made. Oxygen levels detected in the layers were below normal, but not low enough to impact sealife at this time. Although our initial interest in searching for the presence of oil at depth was stimulated by the announcement of deep injection of dispersants we cannot connect the presence of layer signals to this process. It should be noted that crude oil is a complex mixture that can fractionate to float at different levels in the water column through natural processes.

Sincerely,

Ray Highsmith

National Institute for Undersea Science and Technology

University of Mississippi

Samantha Joye

Professor, University of Georgia

Vernon Asper

Professor, University of Southern Mississippi

Justin Kenney

NOAA Director of Communications & External Affairs

Office: 202-482-6090

Cell: 202-821-6310

Email: justin.kenney@noaa.gov



http://www.noaa.gov/socialmedia/


STAY CONNECTED
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Received(Date): Mon, 17 May 2010 18:13:22 -0400
From: Linda belton <Linda.Belton@noaa.gov>
Subject: RE: Tueday pre-brief call at 9:05
To: 'Linda belton' <Linda.Belton@noaa.gov>, dwh.staff@noaa.gov,'John Gray' <John.Gray@noaa.gov>, 'Monica Medina' <Monica.Medina@noaa.gov>,'Sally Yozell' <Sally.Yozell@noaa.gov>,'Amanda Hallberg Greenwell' <Amanda.Hallberg@noaa.gov>,'Margaret Spring' <Margaret.Spring@noaa.gov>
Cc: 'Justin kenney' <Justin.kenney@noaa.gov>

Sally,

Monica will be able to do the calls on Tuesday and Wednesday. Thanks

From: Linda belton [mailto:Linda.Belton@noaa.gov]
Sent: Monday, May 17, 2010 4:19 PM
To: 'dwh.staff@noaa.gov'; 'John Gray'; 'Monica Medina'; 'Sally Yozell'; 'Amanda Hallberg Greenwell'; 'Margaret Spring'
Cc: 'Justin kenney'
Subject: FW: Tueday pre-brief call at 9:05

· Here are the notes from this morning's Governor's call and the agenda for Tuesday's call.

· **Sally, would you be able to lead participate in this week's calls? If not, dwh.staff, please advise on suggested NOAA principal.**

· It would be great if David Kennedy or Dave Westerholm (or both) could join again to discuss the loop current.

· **During WH-IGA 10:00am call, it has been suggested that because of the recent reports on the current, that there be another briefing to the Atlantic coast Governors this week.**

Notes and action items from today's Governors call:

· Administrator Jackson – discussed the recent reports by scientists of giant dispersal plumes of subsea oil. The Administrator said we are in the process now of balancing that academic science with real world facts. We are tracking the scientists' data closely, and trying to verify their conclusions. It may be 1-2 weeks before we know the answers, but we are fast-tracking our analysis. NOAA and EPA are coordinating. Action: Updates between now and when the final analysis is completed.

· Adm. Neffenger – gave the regular report on the leak stabilization efforts. This will continue to be an important update over the next few days.

· Adm. Landry – said weather conditions will allow burns, skimming and dispersants application over the next few days. Action: updates on the success of these actions.

· Adm. Landry— discussed the crab pot/dip stick testing of sub-surface oil. Given the weather, we should be able to conduct this testing. Action: update on the success of the sampling efforts and the findings.

· Adm. Landry— mentioned that we have changed our visible imprint on the beaches, i.e., not using haz mat suits unless it is called for. Action: Communicate this information to Gov. Riley.

· Adm. Landry— mentioned that boom deployment has continued, including westward as requested by Gov. Jindal. (Jindal did not raise the issue of more boom today for the first time. Is he now satisfied?)

· **Loop Current – Adm. Landry/NOAA discussed the loop current. Action: We need to continue to watch this closely, and keep Governors apprised. (There is a request from WH IGA to update the Atlantic Coast Governors)**

· Sobeck— said wildlife crews were not able to get out much over the weekend. They should be able to get out in the coming days. Action: continued update on their findings.

· Dept. of Labor/OSHA— reported on workforce issues, worker training, and translation. Action: can we send the Governors written materials on the information presented on the call?

Tuesday, May 18 Call with Governors

9:05 a.m. pre-brief; 9:15 Governors

[redacted] *b6*

[redacted] *b6* **- Speakers**

Please limit participation in the pre-conference to speakers and essential staff.

DRAFT AGENDA

-

· Opening remarks (Valerie Jarrett)

· EPA Update – **EPA Administrator Lisa Jackson (or Dep Admin Bob Perciasepe)**

o Discussed the recent reports by scientists of giant dispersal plumes of subsea oil. The Administrator said we are in the process now of balancing that academic science with real world facts. We are tracking the scientists' data closely, and trying to verify their conclusions. It may be 1-2 weeks before we know the answers, but we are fast-tracking our analysis. NOAA and EPA are coordinating. Action: Updates between now and when the final analysis is completed.

· Observations and Trajectory-**NOAA**

o NOAA will provide the latest observations and trajectories

o Loop Current – There was a lot of discussion by Landry/NOAA about the loop current. Action: We need to continue to watch this closely, and keep Governors apprised. **(WH-IGA would like to brief the Atlantic Coast Governors with an update this week)**

· Situation and Leak Stabilization Update – **Adm Landry and Adm Watson**

o Latest information from National Incident Command, including current status of efforts to stabilize the leaks.

· Operations Report –**Adm Landry Landry and Adm Watson, UAC**

o Response Plans and Boom

o Landry – said weather conditions will allow burns, skimming and dispersants application over the next few days. Action: updates on the success.

o Landry— discussed the crab pot/dip stick testing of sub-surface oil. Given the weather, we should be able to conduct this testing. Action: update on the success of the sampling efforts and the findings.

o Landry— mentioned that we have changed our visible imprint on the beaches, i.e., not using haz mat suits unless it is called for. Action: Communicate this information to Gov. Riley.

o Landry— mentioned that boom deployment has continued, including westward as requested by Gov. Jindal. (Jindal did not raise the issue of more boom today for the first time. Is he now satisfied?)

Document ID: 0.7.19.1041

· Wildlife Impacts – **Eileen Sobeck, FWS**

o Wildlife crews were not able to get out much over the weekend. They should be able to get out in the coming days. Action: continued update on their findings.

· Fisheries Closures and Seafood Safety (if there is an update) **– NOAA**

· Open discussion and Q&A with Governors and state officials

· Next call – 9:15 a.m. EDT (8:15 CDT) Monday, May 18, 2010

-

Received(Date): Tue, 18 May 2010 12:14:35 -0400
From: Beth.Dieveney@noaa.gov
Subject: Re: May 18 NOAA Deepwater Horizon Call Actions
To: Brian Pawlak <Brian.T.Pawlak@noaa.gov>
Cc: Steve Murawski <Steve.Murawski@noaa.gov>,Helen Golde <Helen.Golde@noaa.gov>, John Rapp <John.Rapp@noaa.gov>,Beth Lumsden <Beth.Lumsden@noaa.gov>

Table will be great - histogram was just mentioned in passing. However NMFS best wants to depict the info we will use.
Thank you.

----- Original Message -----
From: Brian Pawlak <Brian.T.Pawlak@noaa.gov>
Date: Tuesday, May 18, 2010 12:09 pm
Subject: Re: May 18 NOAA Deepwater Horizon Call Actions
To: Beth.Dieveney@noaa.gov
Cc: Steve Murawski <Steve.Murawski@noaa.gov>, Helen Golde <Helen.Golde@noaa.gov>, John Rapp <John.Rapp@noaa.gov>, Beth Lumsden <Beth.Lumsden@noaa.gov>

> Beth
> > We have a table that will show turtle strandings by day..I think that > is > more informative than a histogram. The value of the table is that it > > conveys that just about all the strandings are still inconclusive > regarding the cause....that would quickly get out of wack with a > histogram. When you see what I mean, we can decide if a histogram > still > makes sense....
> > Beth.Dieveney@noaa.gov wrote:
> > For Official Use Only/Not for Public Release
> > NOAA Daily DeepWater Horizon Call
> > Tuesday, May 18, 2010; 0800
> > Telephone: 888-283-0344; code: 1652886
> >
> > Call Guidelines:
> > ·Place your phone on mute at all times unless you are speaking
> > ·Do not place your phone on hold
> >
> > Additional Attachments
> > Task list record of actions from 0800 Daily NOAA calls as of 5/18 > (this is for reference only)
> >
> > Action Items
> > ·Follow-up on research platforms that could be deployed and > sampling plan from all assets (Murawski and team, report in advance of > afternoon testimony)
> > ·Expert briefing for Loop Current (Kenney)
> > ·Histogram by day for turtle strandings (NMFS)
> > ·Request for talking points for turtle strandings (NMFS)
> > ·Precautionary closure of fisheries due to potential of oil in the > loop current (NMFS)
> > ·Assign technical point for OMB, DOC, FDA group regarding seafood > safety; Steve Wilson and Tim Hansen can serve this role.
> > ·Need to have talking points and alert Cuba and Mexico regarding > fishery closure and potential of oil in loop current (Turner)
> > ·Alert WH of fishery closure change (Sarri)
> > ·Talking points on loop current, fishery closure, international, > states – what we are doing to address the potential that oil is in the > loop current (Murawski, Mclean, Turner to send to Kenney by 10am)
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> > Documents cleared through WH clearance process for 5/11/10 > > (currently, this list is incomplete but will be updated on a daily > basis)
> >
> > FACT SHEETS – CLEARED & POSTED ONLINE

> > ·Booms
> > ·Coral reefs & oil
> > ·Marine mammals and sea turtles
> > ·Gulf of Mexico Oil Spill General (Fish)
> > ·Fish stocks in the Gulf of Mexico > > ·Seafood safety
> > ·Impact of crude oil on seafood > > ·Natural Resources Damage Assessment
> > ·Shorelines and coastal habitats in the Gulf of Mexico
> > ·Dispersants (OR&R sheet)
> > ·Shoreline & habitats (OR&R sheet)
> > ·Shoreline Cleanup and Assessment Technique (SCAT) (OR&R sheet)
> >
> > FACT SHEETS – IN CLEARANCE/WORK
> > ·Sheen (cleared/not posted)
> > ·Oil weathering/types
> > ·Loop current
> > ·Mussel Watch
> > ·NOS activities
> > ·Hypoxia (dead zone) & oil
> >
> > Websites for more information:
> > OR&R Response Outreach – (cleared fact sheets)
> > Deepwater Horizon JIC – www.deepwaterhorizonresponse.com > (cleared factsheets)
> > ResponseLink – > > NOAA ICC Sitreps - > > Updates on Fisheries Closure – > > Daily updates to NOAA nautical charts: > >
> > Joint Information Center Contacts (as of 5/11/10)
> > David Miller / 202-329-4030 (LA) david.p.miller@noaa.gov > (through Monday, May 17th)
> > Monica Allen (NOAA Fisheries Communications) is there this week > (5/15-20). Her cell # is 202/379-6693.
> > Replacement: Rachel Wilhelm arrives Sat., May 15th / 202-657-9816.
> >
> > NOAA Scientific Scientist Coordination on site (as of 5/17/10) > > Charlie Henry (206-849-9928) – Robert, LA
> > LCDR Demian Bailey (206-518-1941) - Robert, LA
> > Ed Levine (206-849-9941) - Houma, LA
> > Jordon Stout (206-321-3320) - Houma, LA
> > Frank Csulak (732-371-1005) - Houma, LA > > Ruth Yender (206-849-9926) – Mobile, AL
> > LCDR Liz Jones (206-849-9918) - Mobile, AL > > John Whitney (907-440-8109)- Mobile, AL > > Brad Benggio (206-849-9923) - St. Petersburg, FL > > LTJG Josh Slater (206-462-0710) – Mobile, AL > > Mark Miller (206-713-0640) - NIC, Washington DC
> > Carl Jochums – NOAA contractor boom expert on site.
> > > > > -- > Brian Pawlak
> Deputy Director
> NOAA Fisheries Service
> Office of Habitat Conservation
> 301-713-2325 (167)
> 301-713-1043 (Fax)
> >

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> Brian Pawlak
> Deputy Director
> NOAA Fisheries Service
> Office of Habitat Conservation
> 301-713-2325 (167)
> 301-713-1043 (Fax)
>
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Received(Date): Tue, 18 May 2010 19:37:45 -0400
From: Linda belton <Linda.Belton@noaa.gov>
Subject: Notes from Tuesday, May 18 Governors Call
To: dwh.staff@noaa.gov, 'Monica Medina' <Monica.Medina@noaa.gov>,David.Kennedy@noaa.gov, John.Gray@noaa.gov,'Margaret Spring' <Margaret.Spring@noaa.gov>
Cc: Jen.Pizza@noaa.gov,"'Jacqueline J. Rousseau'" <Jacqueline.J.Rousseau@noaa.gov>

Moderator: Valerie Jarrett

Governors: Jindal

· EPA – applying subsea dispersant (when monitoring ship is in place). Will switch dispersants today based on toxicity. (Action: provide info on new dispersants and reasons)

· Gov. Jindal – questioned the accuracy of the trajectories – he noted that there was significantly more oil along the shoreline than what had been projected. Why is that? Monica

· Gov. Jindal – did the burning, skimming and surface dispersants application get factored into to today's trajectory? **(NOAA response for tomorrow)**

· Gov. Jindal – asked about reports from the SCAT teams

· Adm. Watson – Do not yet have theestimates of oil burned, skimmed and dispersed from yesterday. Will continue those operations today. Can we get estimate of both days for tomorrow?

· Adm. Watson – did not yet have the tests back from the crab pot dip stick testing of the subsurface oil.

· Gov. Jindal – have the tarballs recovered from Marsh Is. in Iberia get tested yet to see whether they are from the BP spill? (no) If it is related, it would be the furthest west that the oil has travelled.

· Eileen Sobeck (FWS) – wildlife teams out yesterday and again today. (Report on wildlife impacts tomorrow?)

· Monica Medina – NOAA seeing increased turtle strandings. Looking to see if there is a pattern that is related to the oil.

· Fish closures - NOAA expanded fisheries closure yesterday; watching the loop current issue closely. If oil moves into the loop current, there will likely be a large expansion of closed fisheries. (NOAA wants to maintain the safety and confidence in the seafood industry.)

· Gov. Jindal – Monica mentioned that oil has moved passed booms and gotten into the marshes. What are the reasons for the oil getting past the boom? Failed boom; too much oil; subsea oil; improperly placed boom? David Kennedy did not know the answer in this case, but

said boom is never a fail-safe solution.

· Gov. Jindal – wants more boom moved to the West (although he acknowledged the 1000 new feet that arrived in Terrebonne

· Gov Jindal – said he met with Col Lee of USACE yesterday to discuss barrier proposal. Col Lee was positive about the comments received on the proposal; and the Governor said that Adm. Landry has been supportive of the proposal. He urged us to expedite the barrier. Do we need to manage expectations?

Linda D. Belton

NOAA Office of Legislative and Intergovernmental Affairs

Phone: (202) 482-5447

Cell: (202) 302-7148

Fax: (202) 482-4960

email: linda.belton@noaa.gov

Received(Date): Wed, 19 May 2010 11:37:00 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Re: NIC Request
To: Jason Rolfe <Jason.Rolfe@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>,William Conner <William.Conner@noaa.gov>,Roger L Parsons <Roger.L.Parsons@noaa.gov>,Robert Pavia <Robert.Pavia@noaa.gov>, Charlie Henry <Charlie.Henry@noaa.gov>,Demian Bailey <Demian.Bailey@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>, ICC.HSPO@noaa.gov,ICC Deputy <ICC.Deputy@noaa.gov>

Thanks Jason~

I am following up with Mary Glackin on this as well from an operational question as a first step at HCHB and will let you know what she reports

Jason Rolfe wrote:

> Mark Miller and I just met with CAPT Scott Beeson, NIC Situation Unit Chief of Staff. He's concerned that there is a large number of academic science vessels operating in the Gulf attempting to gather information on the existance/location of subsurface oil. The number of research vessels offering assistance will likely increase and as we understood it, their activities could impact response actions.
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> **Can the folks on this email at HCHB** consider this single POC for NOAA science?

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary

14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Wed, 19 May 2010 11:13:24 -0500
From: Demian A Bailey <Demian.Bailey@noaa.gov>
Subject: Re: NIC Request
To: Jason Rolfe <Jason.Rolfe@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>,Conner William <William.Conner@noaa.gov>,Roger L Parsons <Roger.L.Parsons@noaa.gov>,Pavia Robert <Robert.Pavia@noaa.gov>, Henry Charlie <Charlie.Henry@noaa.gov>,Miller Mark <Mark.W.Miller@noaa.gov>, ICC.HSPO@noaa.gov,ICC Deputy <ICC.Deputy@noaa.gov>, Samuel Walker <Sam.Walker@noaa.gov>

Actually, I'm not aware of a large number of vessels collecting data. Please let me know their names and a POC. I am familiar with a lot of efforts to get vessels out there, but as far as I know there's only been *Pelican* and the R/V *Brooks McCall. Brooks McCal*l is not a university vessel, but a contracted vessel to BP who does geology work for the oil industry. Also, BP is moving forward with the F*ugro Explorer:* www.fugro.com/showfile.aspx?type=vessels&id=fugroexplorer . This is the vessel they are planning for the long haul. R/v *Walton Smith* is the gap filler. Looks like we're moving ahead with that. Won't be out there for a few more days.
Sam Walker (cc'd here) has been annointed the Sub Sea Czar and is doing a fantastic job. Dr. Walker works for IOOS and has good agency reachback. Here's an important point to remember. BP and the USCG are in charge of this response (not in that order). BP will pay for whom they want, but we can influence it. Otherwise, we end up with another Pelican, not part of the Unified Command effort.

We've been advising and, moreover, responding, to BP's rather disorganized approach to vessel acquisition. If you have someone at the NIC coordinating effortst, it will likely lead to an expectation at some level that we "want" a vessel at the UC. However, NOAA doesn't under the current structure have that power to say we "want" anything.

The second issue you refer to I'll leave to Bill Conner. I know he was considering bringing someone up for that purpose.

/d

On May 19, 2010, at 10:21 AM, Jason Rolfe wrote:

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Received(Date): Wed, 19 May 2010 12:26:54 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Re: NIC Request
To: Demian A Bailey <Demian.Bailey@noaa.gov>
Cc: Jason Rolfe <Jason.Rolfe@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>,Conner William <William.Conner@noaa.gov>,Roger L Parsons <Roger.L.Parsons@noaa.gov>,Pavia Robert <Robert.Pavia@noaa.gov>, Henry Charlie <Charlie.Henry@noaa.gov>,Miller Mark <Mark.W.Miller@noaa.gov>, ICC.HSPO@noaa.gov,ICC Deputy <ICC.Deputy@noaa.gov>, Samuel Walker <Sam.Walker@noaa.gov>,"miche >> \"Michele A. Finn\"" <Michele.A.Finn@noaa.gov>

Please keep Michele Finn looped into these conversations as she likely has valuable insight.

Demian A Bailey wrote:

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Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Wed, 19 May 2010 15:25:22 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Notes from May 19, 11 AM NRT Call
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Below are notes from the May 19, 11 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 19, 2010
11:00 AM

The next NRT meeting is May 20 at 11 AM.

Situation Status:
-Riser insertion tool is capturing up to 3,500 barrels/day. A second tool is in place in case first tool fails.
-Top kill will commence on May 23rd. The process of deployment will take a couple of days.
-There were four successful burns yesterday, and skimming operations were successful.
-Still waiting for research vessel to be in place to resume subsurface dispersant injection.
-Shoreline impacts are being seen in SW Pass and marsh areas. Mitigating strategies are in place. Black ribbons of oil are touching these shores.
-Tarballs found in Key West are not connected to the Deepwater Horizon spill.

Communications:
-Inquiries coming in for new stories from the NYTimes.
-Other hot stories are: shoreline impacts, recent hearings, subsea plume, Loop Current, and issue of transparency with data and videos.

Legal:
-Lawyers from 9 agencies briefed Democrats on the Hill on the Administration's proposed legislation. Republicans are being briefed today.

Intergovernmental:
-Working on narratives --- flow rate (confidence, science), plume location, forecasting.
-Local and governors calls continue. Local calls have more engagement.
-East Coast Governor's call today at 3 pm.
-Online process for claims has gone live.
-Gov. Jindal asked again about dredging and wants to know what impacts have been reported in the marsh.

Congressional Affairs:

-Four hearings occurred this week. Hot topics included --- MMS reform, flow rate, concern about offshore drilling.
-Expect another set of hearings next week on the House side.

Received(Date): Wed, 19 May 2010 17:40:39 -0400
From: "Kimball, Nicholas" <NKimball@doc.gov>
Subject: RE: The just in case scenario
To: "Denit, Kelly" <Kelly.Denit@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>
Cc: "Hallberg, Amanda" <Amanda.Hallberg@noaa.gov>,"Costanza, Jennifer" <JCostanza@doc.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
image001.jpg

Release, etc below. Let me know if you have questions.

Contact: Kim Amendola **FOR IMMEDIATE RELEASE**

727-403-6533 May 18, 2010

NOAA Extends Fishing Closed Area to Portion of Loop Current as Precaution

More Than 81 Percent of Gulf Remains Open to Fishing

NOAA has extended the boundaries of the closed fishing area in the Gulf of Mexico into the northern portion of the loop current as a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will enter the loop current.

The closed area now represents 45,728 square miles, which is slightly less than 19 percent of Gulf of Mexico federal waters. This leaves more than 81 percent of Gulf federal waters—or nearly 195,000 square miles—still available for fishing. The closure will be effective at 6 p.m. EDT. Details can be found at http://sero.nmfs.noaa.gov/.

The newly closed area is more than 150 miles from the nearest port and primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.

”The BP oil spill is unprecedented and quickly changing. The administration’s response since the beginning has been aggressive, strategic, and science-based," said Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere and NOAA administrator. "As we expand the fishing closed area, we are doing what science demands of us and are acting with caution to ensure the safety of the seafood Americans will put on their dinner plates. We stand shoulder-to-shoulder with Gulf coast fishermen and their families during these challenging times.”

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the Gulf of Mexico. The current is also known as the Florida current as it flows through the Florida Strait and then into the Gulf Stream as it heads north to the east coast of the U.S. Both the location of the loop current and the location of the oil slick are dynamic. Both move around from day to day. Satellite imagery on May 17 indicates that the bulk of the oil is dozens of miles away from the loop current, but a tendril of light oil has been transported close to the loop.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood from inside and outside the closure area, as well as dockside- and market-based sampling.

“Due to the unprecedented and ongoing discharge of oil, FDA agrees that NOAA's closure of these federal waters is one appropriate public health measure to prevent potentially unsafe seafood from being harvested and reaching consumers,” said Dr. Margaret Hamburg, FDA commissioner. “We understand that it will be necessary to continually evaluate the boundaries as the situation evolves.

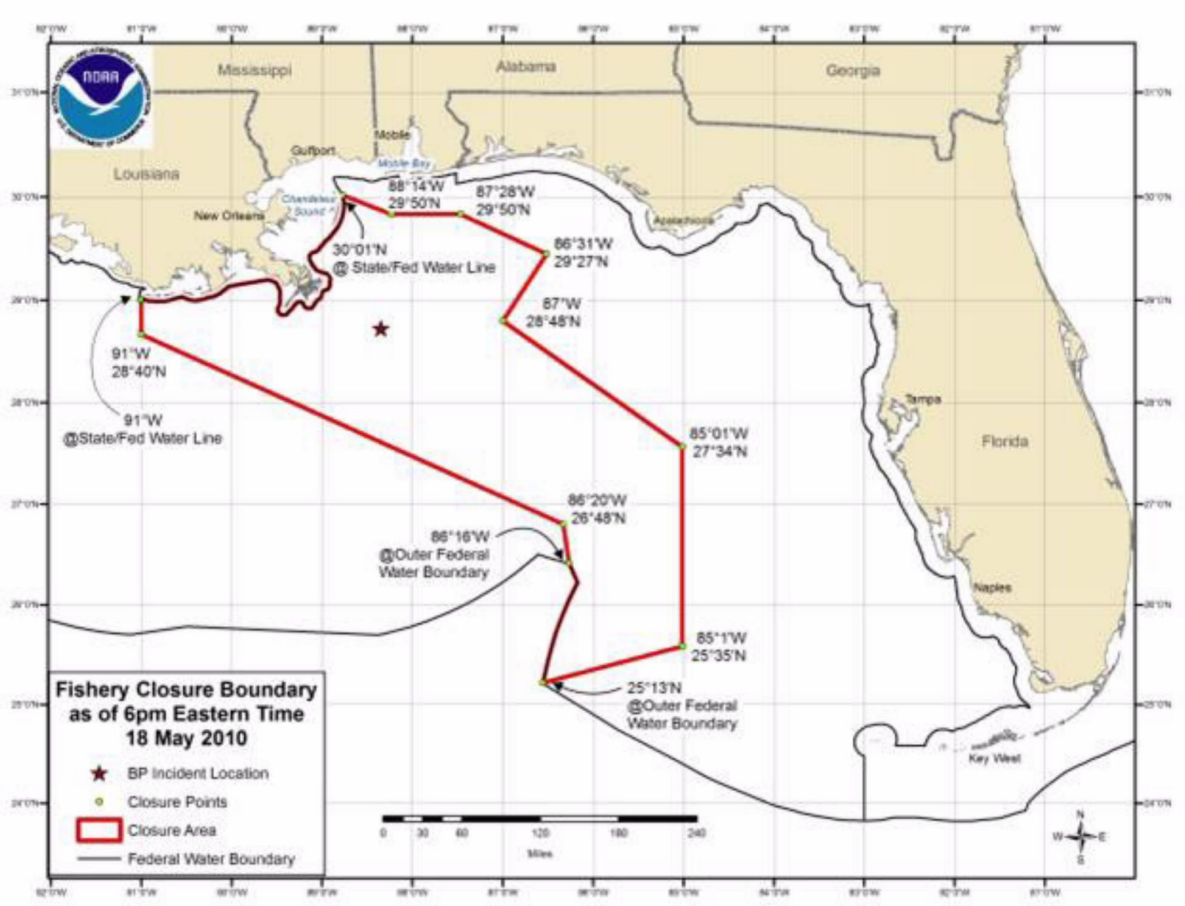
“FDA will also continue to work closely with NOAA on future decisions to reopen the closed fishery,” she added.

According to NOAA, there are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than one billion pounds of finfish and shellfish in 2008.

Fishermen who wish to contact BP about a claim should call 800-440-0858.

NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov.



May 18, 2010 Fishery Closure Talking Points

ξ To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM, May 18, 2010.

ξ The revised closure went into effect at 6 PM, May 18, and is 45,728 square miles (19% of the GOM EEZ).

ξ This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

ξ NOAA expanded the closure boundary to encompass the most conservative projected path of the oil, using the 72-hour trajectory and incorporating the full extent of uncertainty around that projection.

ξ There are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than 1 billion pounds of finfish and shellfish in 2008 with a total landings value of $659 million.

ξ The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety.

ξ NOAA increased its monitoring and sampling efforts and is working closely with the Food and Drug Administration and the Gulf states to ensure seafood safety.

ξ NOAA and FDA are working to re-align assets to implement a broad-scaled sampling plan.

ξ The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological

implications of oil and dispersants.

ξ State governors and international colleagues have been alerted of the closure area expansion and the joint NOAA/FDA seafood sampling plan.

ξ The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the western Gulf of Mexico. It flows across the Gulf and then south toward the tip of Florida. It is known as the Florida Current as it flows between Florida and Cuba, and then merges into the Gulf Stream as it heads north up the East Coast of the U.S. This current is dynamic, and its location changes from day to day.

ξ Currently, satellite imagery indicates the bulk of the oil is dozens of miles away from the loop current, but there is some small portion of the oil in the vicinity of the loop current.

ξ In addition to satellite imagery, NOAA is making daily flights to monitor the spill and predict its trajectory, and is dropping scientific instruments into the Gulf to measure surface and subsurface conditions. NOAA has also redeployed research vessels and other assets to the spill areas, and is working with universities and other federal agencies to collect scientific data about the location of the loop current and subsurface conditions.

ξ The BP oil spill is unprecedented and dynamic. >From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

ξ This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

ξ Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

ξ This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

ξ As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

ξ NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Q&A:

What is the size

of the fisheries closure?

To

address the possibilit y that oil

has
entered
or will
soon

enter the loop current, NOAA

followed
the
science
and acted

with
caution
by
announci

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closure area at 12 PM today,

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square miles (19% of the GOM

EEZ). This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

Why did we expand?

Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will soon enter the loop current.

The closure area expansio

n is one part of a pro-active

stance
that
NOAA is
taking to

ensure
public
and
seafood

safety.

To

ensure

the safety

of seafood harvested from the

Gulf of Mexico, NOAA is working

with the Food and Drug Administ

ration to re-align its assets to

impleme
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broad-
scaled

sampling plan. The plan includes

sampling seafood from inside

and
outside
of the
closure

area, as well as dockside and

market-based sampling. Also,

NOAA is increasing its monitori

ng of the biologica
l
implicati

ons of oil and dispersants.

Decisions to close or re-open

areas to fishing are based on data

indicating where oil has been

present,
its
current
extent,

and projections of its trajectory

over the next 72 hours. NOAA

has
established
process

to expedite modifications to

the
fishing
closed
area in

the Gulf of Mexico, and to

provide daily updates to the

public
about
these
changes.

Boundaries of the fishing closed

area
could be
modified
daily,

based on dynamic oil spill condition

S.

What are the economi

c

impacts?

This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some unknown degree.

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three days out from the date of establishing the closure, and where the oil had been seen.

The goal

of the closure is to encompa

ss the
entire
area the
spill has

actually covered (based on a

combinat
ion of
satellite
and

overfligh
t data) as
well as
the area

the oil is projected to cover three

days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

What is NOAA Fisheries Service doing to monitor and adjust the closed area?

ξ From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

ξ This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

ξ Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

ξ This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

ξ As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

ξ NOAA Fisheries Service, specifically, is closely monitoring the movement of the spill and

has developed a protocol that supports swift agency action in response to new information on the location and extent of the spill and expected fishery impacts.

ξ Our goal is to continuously update the dimensions of the closed area as needed to ensure fish and consumer safety without needlessly restricting productive fishing in areas that are not affected by the spill.

ξ NOAA Fishery managers communicate each day with NOAA's Office of Response and Restoration (ORR). ORR provides three-day trajectory maps, as well as whatever information is available from overflight data regarding the actual location of the spill.

ξ NOAA Fisheries Service then determines whether to modify the closed area boundaries – either by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

How does NOAA review potential fisheries closures under the new rule?

ξ Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.

ξ Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.

ξ Any changes to the closed area boundary will take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.

ξ NOAA Fisheries will open areas that were closed based on the oil spill trajectory if cumulative mapping shows no oil was ever in the area.

Why did NOAA Fisheries Service prohibit fishing in certain areas?

ξ The area closed to fishing was determined to be affected by the Deepwater BP oil spill based

on projections available at the time the decision to close the area was made.

ξ NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.

ξ As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

ξ NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.

ξ We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

RE-OPENING CLOSED FISHERIES

What is the criteria for re-opening fisheries?

The fishery will be reopened when it is determined that there is not a risk of food contamination or adulteration.

Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

ξ NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.

ξ There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

Reopening sequence -

1. *No visible oil sheen observed on the water in the area to be opened;*
2. *No oil found in water analysis;*
3. *No oil found in sensory analysis;*
4. *No oil found in chemical analysis (verification step for sensory analysis).*

Will NOAA offer training or guidance to states as well as local industry?

ξ NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.

ξ NOAA has been participating on weekly calls hosted by FDA with state food regulatory officials to communicate its plans and coordinate efforts.

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

What did NOAA do to collect baseline samples? Are more baseline samples needed?

ξ NOAA performed baseline sampling of seafood products for sensory analysis. These samples will be used for both harmonization of the NOAA and FDA seafood sensory experts and will be used as the baseline comparison when reopening samples are analyzed.

ξ Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.

ξ NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

ξ NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.

ξ Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

What is NMFS' plan for sensory and chemical analysis of seafood?

ξ The immediate plan is to collect baseline sensory samples and use these samples during training and mentoring efforts to be offered to each affected state.

ξ NOAA is in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish.

ξ The standards that are applied for oil are based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to

determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Why is both sensory and chemical analysis needed?

ξ The most effective method of determining acceptability of seafood from oil contaminated areas is sensory analysis. Sensory analysis (smelling, tasting and observing seafood) is a sensitive means of detecting oil contamination. Trained expert assessors are harmonized to the characteristics of the oil.

ξ Chemical analysis is used to verify the results because the possibility of error exists when humans are used as a testingmechanism.

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 4:54 PM
To: Sarri, Kristen
Cc: Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwh.staff@noaa.gov); Kimball, Nicholas
Subject: Re: The just in case scenario

No problem. I can start working on these. Nick, can you please send me the final versions so I can use those as the baseline to work from? I'll make sure Comms has the press release and I'll do TPs and Q&As.

Cheers,
Kelly

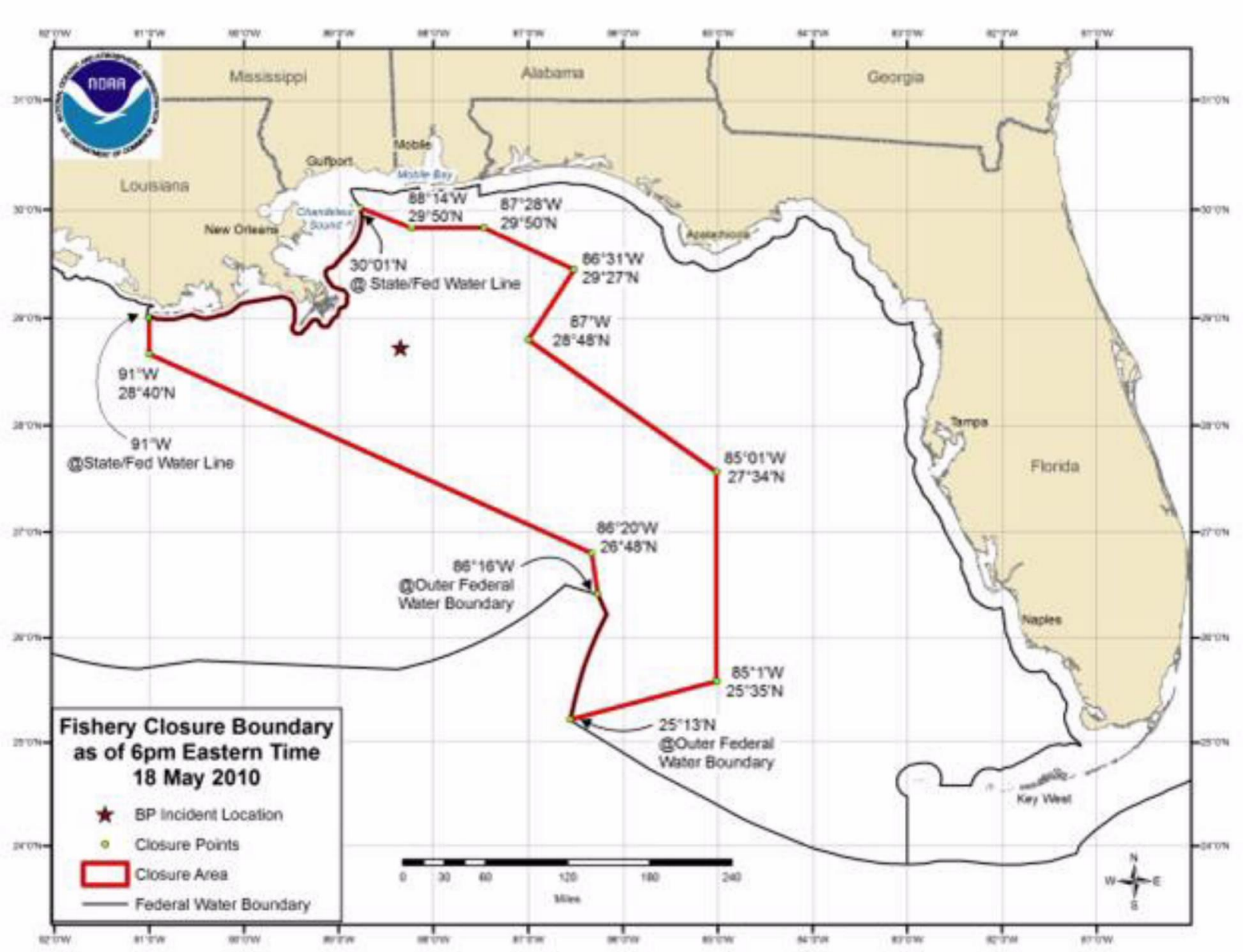
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Thanks, Kris

-- Kelly DenitNOAA Policy OfficeOffice of the Under Secretary of Commerce for Oceans and Atmosphere14th & Constitution Ave., NW, Room 5811Washington, DC 20230 phone: 202-482-1747cell: 301-580-7395 fax: 202-482-4116



Document ID: 0.7.19.1066.1

Received(Date): Wed, 19 May 2010 18:25:30 -0400
From: Kelly Denit <Kelly.Denit@noaa.gov>
Subject: Re: The just in case scenario
To: "Kimball, Nicholas" <NKimball@doc.gov>
Cc: "Sarri, Kristen" <KSarri@doc.gov>,"Hallberg, Amanda" <Amanda.Hallberg@noaa.gov>,"Costanza, Jennifer" <JCostanza@doc.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

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> Release, etc below. Let me know if you have questions.

Contact: Kim Amendola **FOR IMMEDIATE RELEASE**

727-403-6533 May 18, 2010

NOAA Extends Fishing Closed Area to Portion of Loop Current as Precaution

More Than 81 Percent of Gulf Remains Open to Fishing

NOAA has extended the boundaries of the closed fishing area in

the Gulf of Mexico into the northern portion of the loop current as a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will enter the loop current.

The closed area now represents 45,728 square miles, which is slightly less than 19 percent of Gulf of Mexico federal waters. This leaves more than 81 percent of Gulf federal waters— or nearly 195,000 square miles— still available for fishing. The closure will be effective at 6 p.m. EDT. Details can be found at http://sero.nmfs.noaa.gov/.

The newly closed area is more than 150 miles from the nearest port and primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.

”The BP oil spill is unprecedented and quickly changing. The administration’s response since the beginning has been aggressive, strategic, and science-based," said Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere and NOAA administrator. "As we expand the fishing closed area, we are doing what science demands of us and are acting with caution to ensure the safety of the seafood Americans will put on their dinner plates. We stand shoulder-to-shoulder with Gulf coast fishermen and their families during these challenging times.”

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the Gulf of Mexico. The current is also known as the Florida current as it flows through the Florida Strait and then into the Gulf Stream as it heads north to the east coast of the U.S. Both the location of the loop current and the location of the oil slick are dynamic. Both move around from day to day. Satellite imagery on May 17 indicates that the bulk of the oil is dozens of miles away from the loop current, but a tendril of light oil has been transported close to the loop.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood from inside and outside the closure area, as well as dockside- and market-based sampling.

“Due to the unprecedented and ongoing discharge of oil, FDA agrees that NOAA's closure of these federal waters is one appropriate public health measure to prevent potentially unsafe seafood from being harvested and reaching consumers,” said Dr. Margaret Hamburg, FDA commissioner. “We understand that it will be necessary to continually evaluate the boundaries as the situation evolves.

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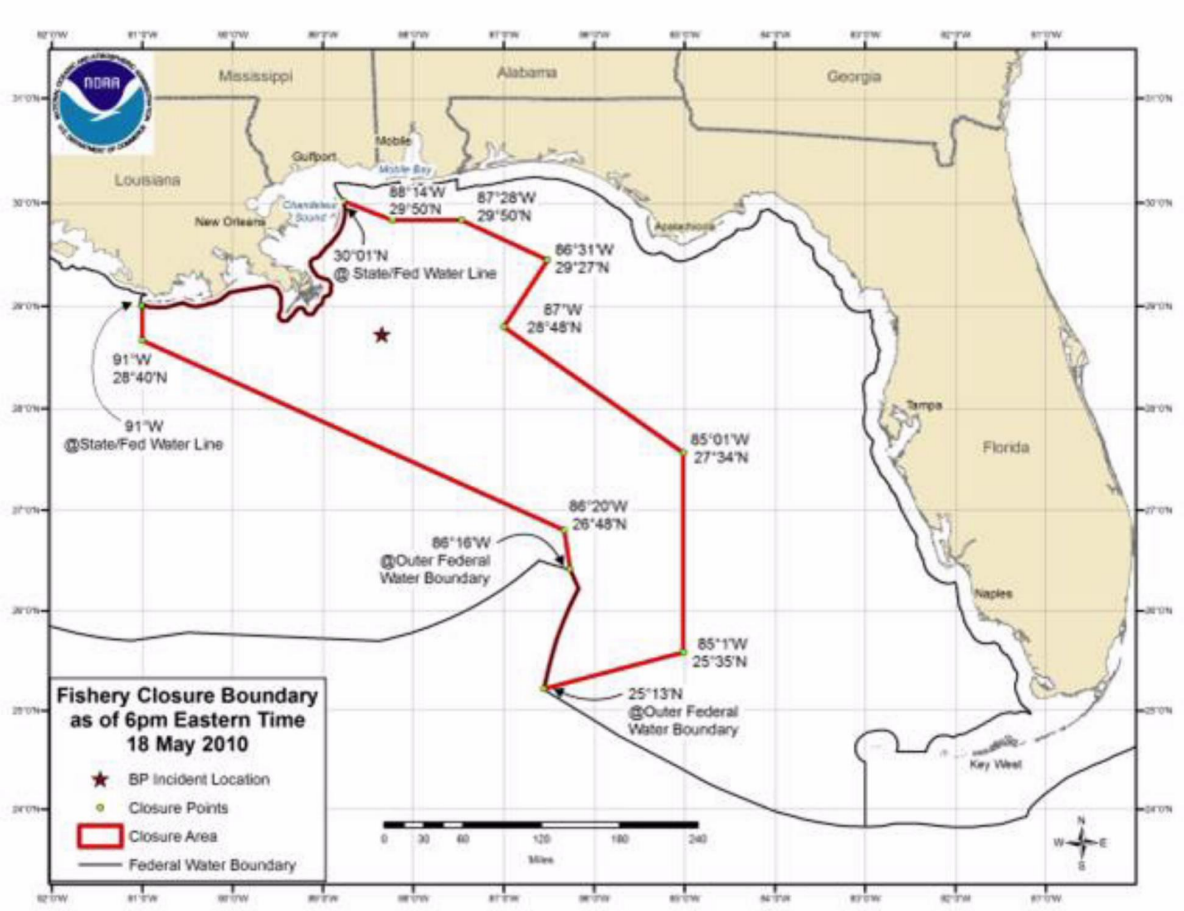
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NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA’s mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at

http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov.



May 18, 2010 Fishery Closure Talking Points

ξ To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM, May 18, 2010.

ξ The revised closure went into effect at 6 PM, May 18, and is 45,728 square miles (19% of the GOM EEZ).

ξ This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

ξ NOAA expanded the closure boundary to encompass the most conservative projected path of the oil, using the 72-hour trajectory and incorporating the full extent of uncertainty around that projection.

ξ There are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than 1 billion pounds of finfish and shellfish in 2008 with a total landings value of $659 million.

ξ The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety.

ξ NOAA increased its monitoring and sampling efforts and is working closely with the Food and Drug Administration and the Gulf states to ensure seafood safety.

ξ NOAA and FDA are working to re-align assets to implement a broad-scaled sampling plan.

ξ The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

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Document ID: 0.7.19.591

ξ Currently, satellite imagery indicates the bulk of the oil is dozens of miles away from the loop current, but there is some small portion of the oil in the vicinity of the loop current.

ξ In addition to satellite imagery, NOAA is making daily flights to monitor the spill and predict its trajectory, and is dropping scientific instruments into the Gulf to measure surface and subsurface conditions. NOAA has also redeployed research vessels and other assets to the spill areas, and is working with universities and other federal agencies to collect scientific data about the location of the loop current and subsurface conditions.

ξ The BP oil spill is unprecedented and dynamic. >From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

ξ This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

ξ Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

ξ This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

ξ As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

ξ NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Q&A:

What is the size of the fisheries closure?

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM today, May 18, 2010. The revised closure will be effective at 6 PM this evening and is 45,728 square miles (19% of the GOM EEZ). This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

Why did we expand?

Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will soon enter the loop current.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety. To ensure the safety of seafood harvested from the Gulf of Mexico, NOAA is working with the Food and Drug Administration to re-align its assets to implement a broad-scaled sampling plan. The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

Decisions to close or re-open areas to fishing are based on data indicating where oil has been present, its current extent, and projections of its trajectory over the next 72 hours.

NOAA has established a process to expedite modifications to the fishing closed area in the Gulf of Mexico, and to provide daily updates to the public about these changes. Boundaries of the fishing closed area could be modified daily, based on dynamic oil spill conditions.

What are the economic impacts?

This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some unknown degree.

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three days out from the date of establishing the closure, and where the oil had been seen.

The goal of the closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

What is NOAA Fisheries Service doing to monitor and adjust the closed area?

ξ From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

ξ This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

ξ Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

ξ This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

ξ As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the

private sector will continue to play a key role.

ξ NOAA Fisheries Service, specifically, is closely monitoring the movement of the spill and has developed a protocol that supports swift agency action in response to new information on the location and extent of the spill and expected fishery impacts.

ξ Our goal is to continuously update the dimensions of the closed area as needed to ensure fish and consumer safety without needlessly restricting productive fishing in areas that are not affected by the spill.

ξ NOAA Fishery managers communicate each day with NOAA's Office of Response and Restoration (ORR). ORR provides three-day trajectory maps, as well as whatever information is available from overflight data regarding the actual location of the spill.

ξ NOAA Fisheries Service then determines whether to modify the closed area boundaries – either by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

How does NOAA review potential fisheries closures under the new rule?

ξ Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.

ξ Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.

ξ Any changes to the closed area boundary will take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.

ξ NOAA Fisheries will open areas that were closed based on the oil spill trajectory if cumulative mapping shows no oil was ever in the area.

Why did NOAA Fisheries Service prohibit fishing in certain areas?

ξ The area closed to fishing was determined to be affected by the Deepwater BP oil spill based on projections available at the time the decision to close the area was made.

ξ NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.

ξ As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

ξ NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.

ξ We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

RE-OPENING CLOSED FISHERIES

What is the criteria for re-opening fisheries?

The fishery will be reopened when it is determined that there is not a risk of food contamination or adulteration.

Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

ξ NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.

ξ There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

Reopening sequence -

1. No visible oil sheen observed on the water in the area to be opened;

2. No oil found in water analysis;

3. No oil found in sensory analysis;

4. No oil found in chemical analysis (verification step for sensory analysis).

Will NOAA offer training or guidance to states as well as local industry?

ξ NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.

ξ NOAA has been participating on weekly calls hosted by FDA with state food regulatory officials to communicate its plans and coordinate efforts.

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

What did NOAA do to collect baseline samples? Are more baseline samples needed?

ξ NOAA performed baseline sampling of seafood products for sensory analysis. These samples will be used for both harmonization of the NOAA and FDA seafood sensory experts and will be used as the baseline comparison when reopening samples are analyzed.

ξ Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.

ξ NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

ξ NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.

ξ Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

What is NMFS' plan for sensory and chemical analysis of seafood?

ξ The immediate plan is to collect baseline sensory samples and use these samples during training and mentoring efforts to be offered to each affected state.

ξ NOAA is in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish.

ξ The standards that are applied for oil are based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Why is both sensory and chemical analysis needed?

ξ The most effective method of determining acceptability of seafood from oil contaminated areas is sensory analysis. Sensory analysis (smelling, tasting and observing seafood) is a sensitive means of detecting oil contamination. Trained expert assessors are harmonized to the characteristics of the oil.

ξ Chemical analysis is used to verify the results because the possibility of error exists when humans are used as a testing mechanism.

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 4:54 PM
To: Sarri, Kristen
Cc: Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwh.staff@noaa.gov); Kimball, Nicholas
Subject: Re: The just in case scenario

No problem. I can start working on these. Nick, can you please send me the final versions so I can use those as the baseline to work from? I'll make sure Comms has the press release and I'll do TPs and Q&As.

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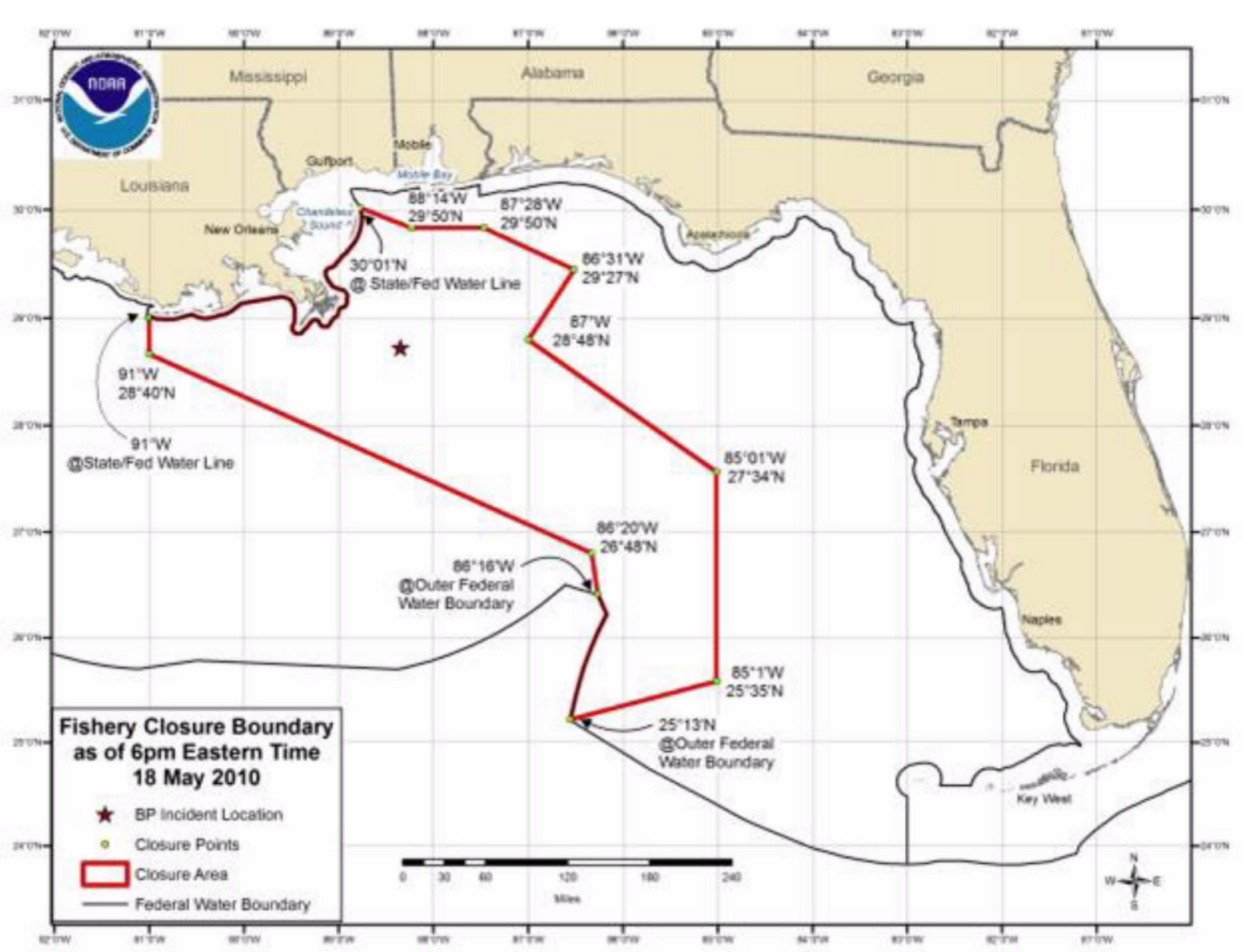
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-- Kelly Denit NOAA Policy Office Office of the Under Secretary of Commerce for Oceans and Atmosphere 14th & Constitution Ave., NW, Room 5811 Washington, DC 20230 phone: 202-482-1747 cell: 301-580-7395 fax: 202-482-4116

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Kelly Denit
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Mississippi
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Key West
88°14'W
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@Outer Federal
Water Boundary
Fishery Closure Boundary
as of 6pm Eastern Time
18 May 2010
BP Incident Location
Closure Points
Closure Area
Federal Water Boundary
0
30
60
120
180
240
Miles
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Received(Date): Wed, 19 May 2010 18:27:27 -0400
From: "Costanza, Jennifer" <JCostanza@doc.gov>
Subject: RE: The just in case scenario
To: "Denit, Kelly" <Kelly.Denit@noaa.gov>,"Kimball, Nicholas" <NKimball@doc.gov>
Cc: "Sarri, Kristen" <KSarri@doc.gov>,"Hallberg, Amanda" <Amanda.Hallberg@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
image001.jpg

Templates, without numbers to clear in DOC and we'll insert numbers the next time we have a closure and be ready to get to WH within minutes. …that is my understanding anyway. Kris?

Jennifer Costanza

Office of the Secretary

Office of Legislative and Intergovernmental Affairs

1401 Constitution Ave., NW

Washington DC, 20230

Office: 202.482.1286

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From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 6:26 PM
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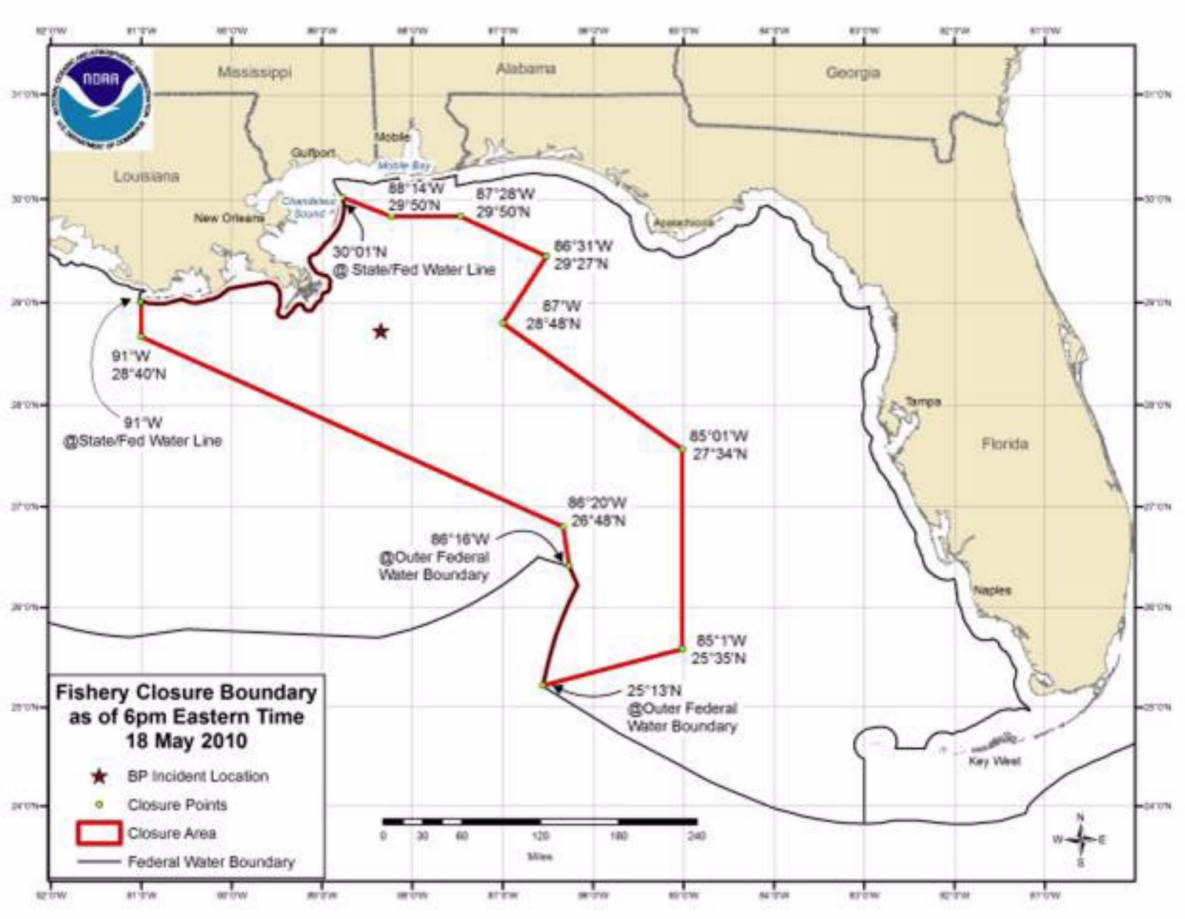
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This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak

As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Q&A:

What is the size of the fisheries closure?

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM today, May 18, 2010. The revised closure will be effective at 6 PM this evening and is 45,728 square miles (19% of the GOM EEZ). This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

Why did we expand?

Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will soon enter the loop current.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety. To ensure the safety of seafood harvested from the Gulf of Mexico, NOAA is working with the Food and Drug Administration to re-align its assets to implement a broad-scaled sampling plan. The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

Decisions to close or re-open areas to fishing are based on data indicating where oil has been present, its current extent, and projections of its trajectory over the next 72 hours.

NOAA has established a process to expedite modifications to the fishing closed area in the Gulf of Mexico, and to provide daily updates to the public about these changes. Boundaries of the fishing closed area could be modified daily, based on dynamic oil spill conditions.

What are the economic impacts?

This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some

unknown degree.

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three days out from the date of establishing the closure, and where the oil had been seen.

The goal of the closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

What is NOAA Fisheries Service doing to monitor and adjust the closed area?

From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

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NOAA Fisheries Service, specifically, is closely monitoring the movement of the spill and has developed a protocol that supports swift agency action in response to new information on the location and extent of the spill and expected fishery impacts.

Our goal is to continuously update the dimensions of the closed area as needed to ensure fish and consumer safety without needlessly restricting productive fishing in areas that are not affected by the spill.

NOAA Fishery managers communicate each day with NOAA's Office of Response and Restoration (ORR). ORR provides three-day trajectory maps, as well as whatever information is available from overflight data regarding the actual location of the spill.

NOAA Fisheries Service then determines whether to modify the closed area boundaries – either by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

How does NOAA review potential fisheries closures under the new rule?

Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.

Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.

Any changes to the closed area boundary will take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.

NOAA Fisheries will open areas that were closed based on the oil spill trajectory if cumulative mapping shows no oil was ever in the area.

Why did NOAA Fisheries Service prohibit fishing in certain areas?

The area closed to fishing was determined to be affected by the Deepwater BP oil spill based on projections available at the time the decision to close the area was made.

NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.

As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.

We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

RE-OPENING CLOSED FISHERIES

What is the criteria for re-opening fisheries?

The fishery will be reopened when it is determined that there is not a risk of food contamination or adulteration.

Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.

There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

Reopening sequence -

1. No visible oil sheen observed on the water in the area to be opened;

2. No oil found in water analysis;

3. No oil found in sensory analysis;

4. No oil found in chemical analysis (verification step for sensory analysis).

Will NOAA offer training or guidance to states as well as local industry?

NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.

NOAA has been participating on weekly calls hosted by FDA with state food regulatory officials to communicate its plans and coordinate efforts.

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

What did NOAA do to collect baseline samples? Are more baseline samples needed?

NOAA performed baseline sampling of seafood products for sensory analysis. These samples will be used for both harmonization of the NOAA and FDA seafood sensory experts and will be used as the baseline comparison when reopening samples are analyzed.

Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.

NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.

Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

What is NMFS' plan for sensory and chemical analysis of seafood?

The immediate plan is to collect baseline sensory samples and use these samples during training and mentoring efforts to be offered to each affected state.

NOAA is in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish.

The standards that are applied for oil are based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Why is both sensory and chemical analysis needed?

The most effective method of determining acceptability of seafood from oil contaminated areas is sensory analysis. Sensory analysis (smelling, tasting and observing seafood) is a sensitive means of detecting oil contamination. Trained expert assessors are harmonized to the characteristics of the oil.

Chemical analysis is used to verify the results because the possibility of error exists when humans are used as a testing mechanism.

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 4:54 PM
To: Sarri, Kristen
Cc: Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwh.staff@noaa.gov); Kimball, Nicholas
Subject: Re: The just in case scenario

No problem. I can start working on these. Nick, can you please send me the final versions so I can use those as the baseline to work from? I'll make sure Comms has the press release and I'll do TPs and Q&As.

Cheers,
Kelly

Sarri, Kristen wrote:

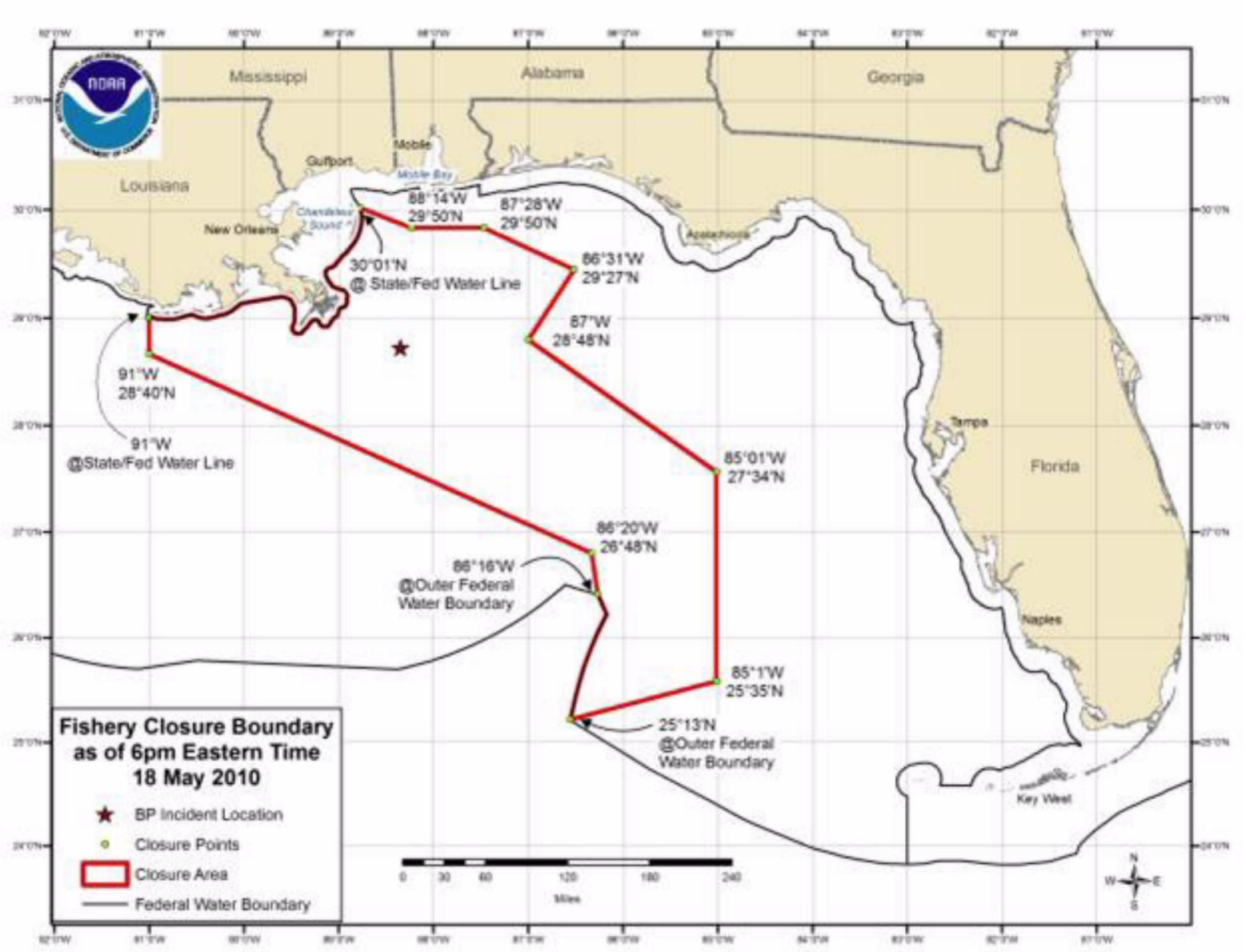
Hey Guys,

Yesterday, we talk about proactively having TPs and a press release ready for fishery closures. Since this is a high probability tomorrow, could we start preparing tonight? Kelly, I think that you said you would run point here. I am cc'ing Team Deepwater so they know what I am up to. Also, cc'ing Nick as I think he had the final version of TPs, Q&A, and press release that went to WH so we can use those as the base and build so we don't start anew.

Thanks, Kris

-- Kelly DenitNOAA Policy OfficeOffice of the Under Secretary of Commerce for Oceans and Atmosphere14th & Constitution Ave., NW, Room 5811Washington, DC 20230 phone: 202-482-1747cell: 301-580-7395 fax: 202-482-4116

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Mississippi
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Mobile
Mobile Bay
New Orleans
Chandeleur Sound
Apalachicola
Tampa
Florida
Naples
Key West
88°14'W
29°50'N
87°28'W
29°50'N
30°01'N
@ State/Fed Water Line
86°31'W
29°27'N
87°W
28°48'N
91°W
28°40'N
91°W
@State/Fed Water Line
85°01'W
27°34'N
86°20'W
26°48'N
86°16'W
@Outer Federal
Water Boundary
85°1'W
25°35'N
25°13'N
@Outer Federal
Water Boundary
Fishery Closure Boundary
as of 6pm Eastern Time
18 May 2010
BP Incident Location
Closure Points
Closure Area
Federal Water Boundary
0
30
60
120
180
240
Miles
N
W
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Received(Date): Wed, 19 May 2010 18:32:39 -0400
From: "Kimball, Nicholas" <NKimball@doc.gov>
Subject: RE: The just in case scenario
To: "Costanza, Jennifer" <JCostanza@doc.gov>,"Denit, Kelly" <Kelly.Denit@noaa.gov>
Cc: "Sarri, Kristen" <KSarri@doc.gov>,"Hallberg, Amanda" <Amanda.Hallberg@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
image001.jpg

I think these documents can really be the templates, assuming most of the other circumstances don't change, just different boundaries of the closure. Then we can plug in numbers, tweak as needed and get it through clearance.

Obviously if events change substantially we'd need to rework things to make it fit.

From: Costanza, Jennifer
Sent: Wednesday, May 19, 2010 6:27 PM
To: Denit, Kelly; Kimball, Nicholas
Cc: Sarri, Kristen; Hallberg, Amanda; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: RE: The just in case scenario

Templates, without numbers to clear in DOC and we'll insert numbers the next time we have a closure and be ready to get to WH within minutes. …that is my understanding anyway. Kris?

Jennifer Costanza

Office of the Secretary

Office of Legislative and Intergovernmental Affairs

1401 Constitution Ave., NW

Washington DC, 20230

Office: 202.482.1286

Cell: 202.285.0830

Fax: 202.482.4420

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 6:26 PM
To: Kimball, Nicholas
Cc: Sarri, Kristen; Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: Re: The just in case scenario

Hi all,

I think I need some further clarity on what you all are expecting with this exercise. Chris just came back from the 5pm meeting and indicated you all are looking for a set of template TPs, Q&A's, and press release with blanks where the specific size/percent/etc. of the closure would go. He indicated you all were looking for this tonight in order for it to be shared up the chain, even without the numbers.

I thought I was supposed to provide updated TPs, Q&As, and press release, complete with the numbers (once a decision is made), as soon as possible in the morning.

Can you guys clarify exactly what you want me to put together? I'll make sure to work with Comms (Justin) on whatever is needed.

Cheers,
Kelly

Kimball, Nicholas wrote:

Release, etc below. Let me know if you have questions.

Contact: Kim Amendola
727-403-6533

FOR IMMEDIATE RELEASE
May 18, 2010

NOAA Extends Fishing Closed Area to Portion of Loop Current as Precaution

More Than 81 Percent of Gulf Remains Open to Fishing

NOAA has extended the boundaries of the closed fishing area in the Gulf of Mexico into the northern portion of the loop current as a precautionary measure to

ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will enter the loop current.

The closed area now represents 45,728 square miles, which is slightly less than 19 percent of Gulf of Mexico federal waters. This leaves more than 81 percent of Gulf federal waters—or nearly 195,000 square miles—still available for fishing. The closure will be effective at 6 p.m. EDT. Details can be found at http://sero.nmfsnoaa.gov/.

The newly closed area is more than 150 miles from the nearest port and primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.

”The BP oil spill is unprecedented and quickly changing. The administration’s response since the beginning has been aggressive, strategic, and science-based," said Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere and NOAA administrator. "As we expand the fishing closed area, we are doing what science demands of us and are acting with caution to ensure the safety of the seafood Americans will put on their dinner plates. We stand shoulder-to-shoulder with Gulf coast fishermen and their families during these challenging times.”

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the Gulf of Mexico. The current is also known as the Florida current as it flows through the Florida Strait and then into the Gulf Stream as it heads north to the east coast of the U.S. Both the location of the loop current and the location of the oil slick are dynamic. Both move around from day to day. Satellite imagery on May 17 indicates that the bulk of the oil is dozens of miles away from the loop current, but a tendril of light oil has been transported close to the loop.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood

from inside and outside the closure area, as well as dockside- and market-based sampling.

“Due to the unprecedented and ongoing discharge of oil, FDA agrees that NOAA's closure of these federal waters is one appropriate public health measure to prevent potentially unsafe seafood from being harvested and reaching consumers,” said Dr. Margaret Hamburg, FDA commissioner. “We understand that it will be necessary to continually evaluate the boundaries as the situation evolves.

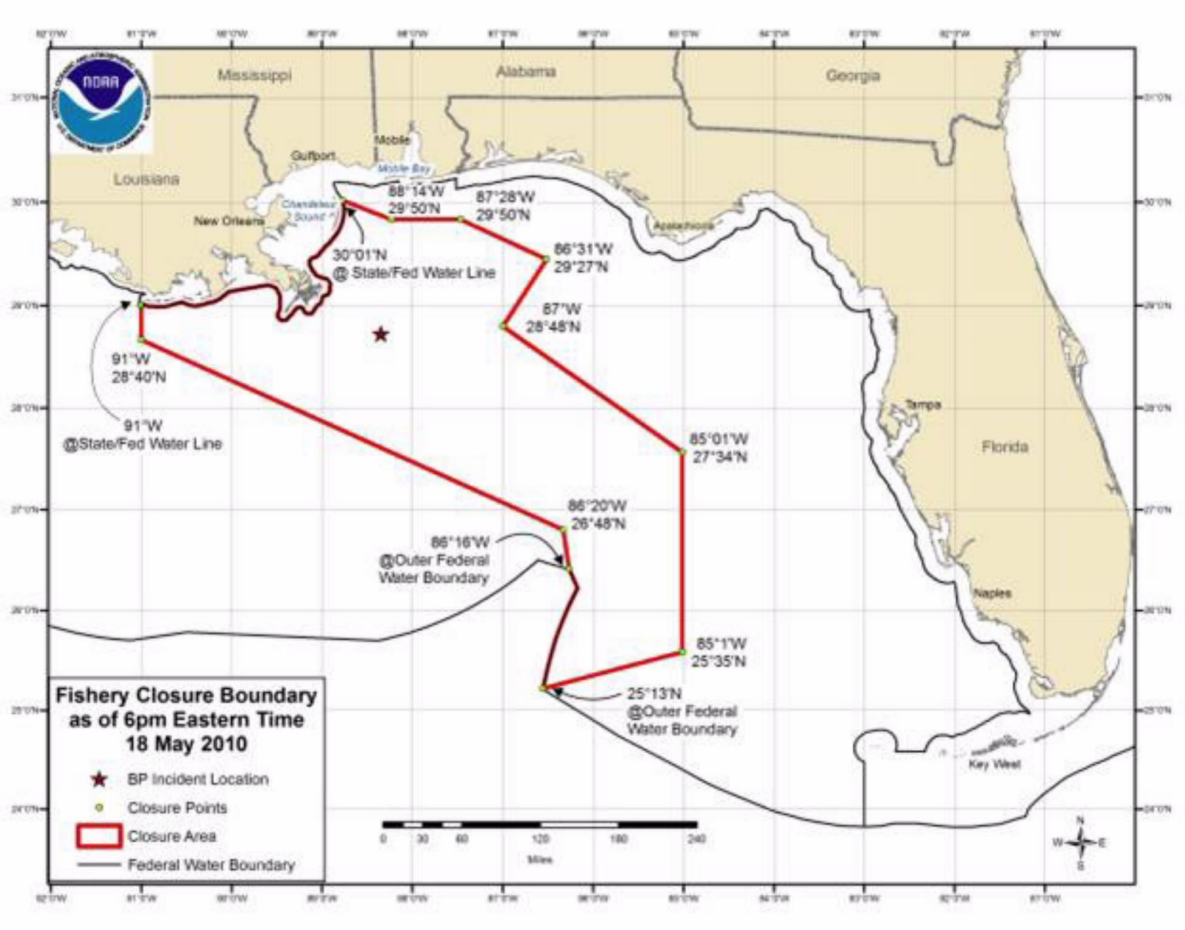
“FDA will also continue to work closely with NOAA on future decisions to reopen the closed fishery,” she added.

According to NOAA, there are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than one billion pounds of finfish and shellfish in 2008.

Fishermen who wish to contact BP about a claim should call 800-440-0858.

NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA’s mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov.



May 18, 2010 Fishery Closure Talking Points

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM, May 18, 2010.

The revised closure went into effect at 6 PM, May 18, and is 45,728 square miles (19% of the GOM EEZ).

Document ID: 0.7.19.592

This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

NOAA expanded the closure boundary to encompass the most conservative projected path of the oil, using the 72-hour trajectory and incorporating the full extent of uncertainty around that projection.

There are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than 1 billion pounds of finfish and shellfish in 2008 with a total landings value of $659 million.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety.

NOAA increased its monitoring and sampling efforts and is working closely with the Food and Drug Administration and the Gulf states to ensure seafood safety.

NOAA and FDA are working to re-align assets to implement a broad-scaled sampling plan.

The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

State governors and international colleagues have been alerted of the closure area expansion and the joint NOAA/FDA seafood sampling plan.

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the western Gulf of Mexico. It flows across the Gulf and then south toward the tip of Florida. It is known as the Florida Current as it flows between Florida and Cuba, and then merges into the Gulf Stream as it heads north up the East Coast of the US. This current is dynamic, and its location changes from day to day.

Currently, satellite imagery indicates the bulk of the oil is dozens of miles away from the loop current, but there is some small portion of the oil in the vicinity of the loop current.

In addition to satellite imagery, NOAA is making daily flights to monitor the spill and predict its trajectory, and is dropping scientific instruments into the Gulf to measure surface and subsurface conditions. NOAA has also redeployed research vessels and other assets to the spill areas, and is working with universities and other federal agencies to collect scientific data about the location of the loop current and subsurface conditions.

The BP oil spill is unprecedented and dynamic. From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

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As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Q&A:

What is the size of the fisheries closure?

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Decisions to close or re-open areas to fishing are based on data indicating where oil has been present, its current extent, and projections of its trajectory over the next 72 hours.

NOAA has established a process to expedite modifications to the fishing closed area in the Gulf of Mexico, and to provide daily updates to the public about these changes. Boundaries of the fishing closed area could be modified daily, based on dynamic oil spill conditions.

What are the economic impacts?

This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some unknown degree.

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three days out from the date of establishing the closure, and where the oil had been seen.

The goal of the closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

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NOAA Fisheries Service then determines whether to modify the closed area boundaries – either

by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

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Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.

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NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.

As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.

We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

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Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.

There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

Reopening sequence -

1. *No visible oil sheen observed on the water in the area to be opened;*
2. *No oil found in water analysis;*
3. *No oil found in sensory analysis;*
4. *No oil found in chemical analysis (verification step for sensory analysis).*

Will NOAA offer training or guidance to states as well as local industry?

NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.

NOAA has been participating on weekly calls hosted by FDA with state food regulatory officials to communicate its plans and coordinate efforts.

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

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Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.

NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.

Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

What is NMFS' plan for sensory and chemical analysis of seafood?

The immediate plan is to collect baseline sensory samples and use these samples during training and mentoring efforts to be offered to each affected state.

NOAA is in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish.

The standards that are applied for oil are based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Why is both sensory and chemical analysis needed?

The most effective method of determining acceptability of seafood from oil contaminated areas is sensory analysis. Sensory analysis (smelling, tasting and observing seafood) is a sensitive means of detecting oil contamination. Trained expert assessors are harmonized to the characteristics of the oil.

Chemical analysis is used to verify the results because the possibility of error exists when humans are used as a testing mechanism.

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 4:54 PM
To: Sarri, Kristen
Cc: Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwhstaff@noaa.gov); Kimball, Nicholas
Subject: Re: The just in case scenario

No problem. I can start working on these. Nick, can you please send me the final versions so I can use those as the baseline to work from? I'll make sure Comms has the press release and I'll do TPs and Q&As.

Cheers,
Kelly

Sarri, Kristen wrote:

Hey Guys,

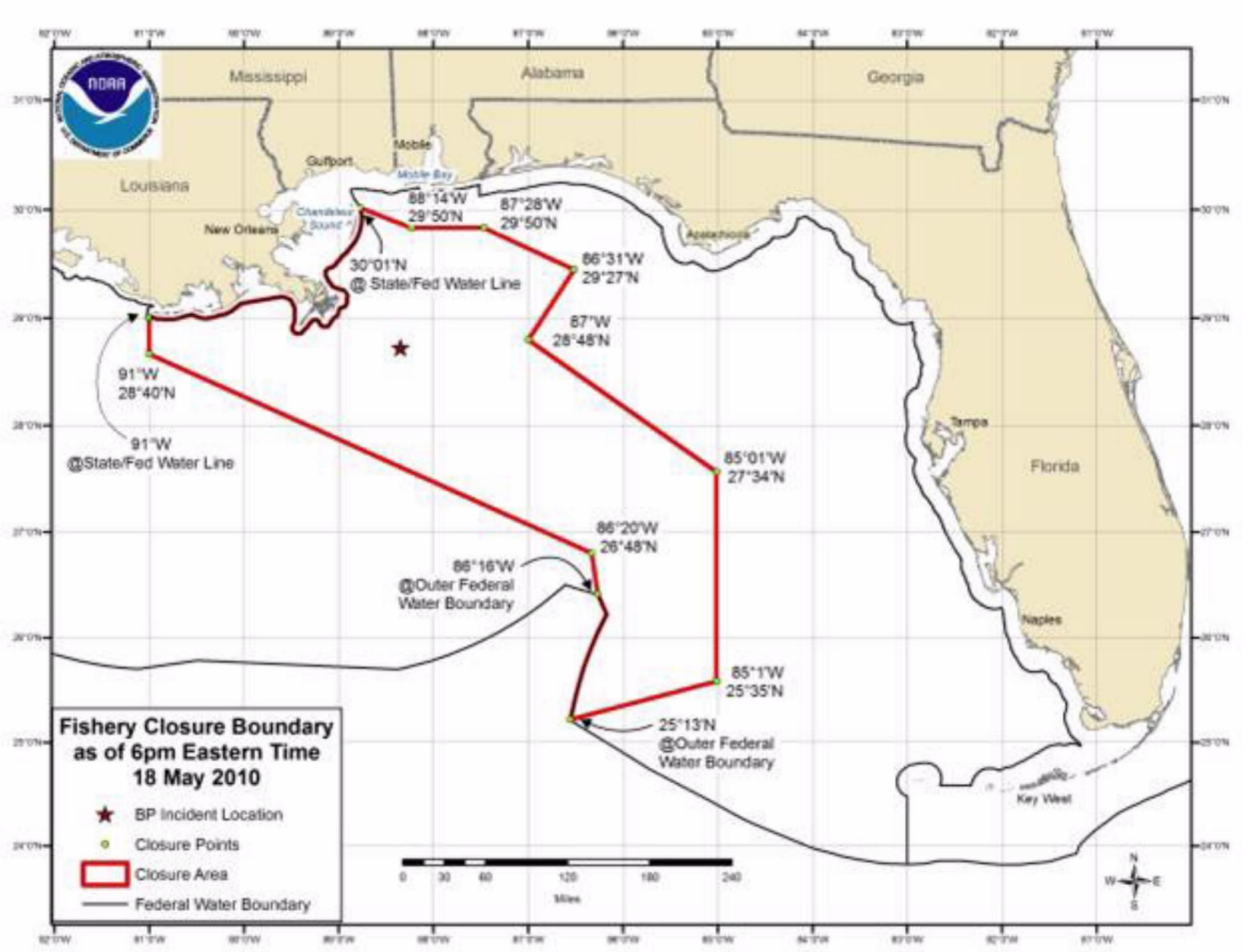
Yesterday, we talk about proactively having TPs and a press release ready for fishery closures. Since this is a high probability tomorrow, could we start preparing tonight? Kelly, I think that you said you would run point here. I am cc'ing Team Deepwater so they know what I am up to. Also, cc'ing Nick as I think he had the final version of TPs, Q&A, and press release that went to WH so we can use those as the base and build so we don't start anew.

Thanks, Kris

-- Kelly DenitNOAA Policy OfficeOffice of the Under Secretary of Commerce for

Oceans and Atmosphere14th & Constitution Ave., NW, Room 5811Washington, DC 20230 phone: 202-482-1747cell: 301-580-7395 fax: 202-482-4116

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Mississippi
Alabama
Georgia
Louisiana
Gulfport
Mobile
Mobile Bay
New Orleans
Chandeleur Sound
Apalachicola
Tampa
Florida
Naples
Key West
88°14'W
29°50'N
87°28'W
29°50'N
30°01'N
@ State/Fed Water Line
86°31'W
29°27'N
87°W
28°48'N
91°W
28°40'N
91°W
@State/Fed Water Line
85°01'W
27°34'N
86°20'W
26°48'N
86°16'W
@Outer Federal
Water Boundary
85°1'W
25°35'N
25°13'N
@Outer Federal
Water Boundary
Fishery Closure Boundary
as of 6pm Eastern Time
18 May 2010
BP Incident Location
Closure Points
Closure Area
Federal Water Boundary
0
30
60
120
180
240
Miles
N
W
E
S

Received(Date): Wed, 19 May 2010 19:02:08 -0400
From: Kelly Denit <Kelly.Denit@noaa.gov>
Subject: Re: The just in case scenario
To: "Kimball, Nicholas" <NKimball@doc.gov>
Cc: "Costanza, Jennifer" <JCostanza@doc.gov>,"Sarri, Kristen" <KSarri@doc.gov>,"Hallberg, Amanda" <Amanda.Hallberg@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"'justin.kenney@noaa.gov'" <Justin.kenney@noaa.gov>,Scott Smullen <Scott.Smullen@noaa.gov>,Jennifer Austin <Jennifer.Austin@noaa.gov>,Christopher Meaney <Christopher.Meaney@noaa.gov>,Kelly Denit <Kelly.Denit@noaa.gov>
Fishery Closure TPs template.docx
Fishery Closure press release template.docx
Fishery Closure Q&As template.docx

Hi folks,

I have pulled the TPs, Q&As, and press release from May 18 out of the email below and put them in Word documents (see attached) to serve as templates as we move forward. I have inserted X's where the size/percent will be filled in and put brackets around areas where the language may change depending on where/how big the closure is and our reason for it (e.g., whether we confirm that oil is in the loop current, there may be changes to what fisheries are impacted, etc.).

Justin, Scott and Jen, to bring you up to speed--we have used our previously cleared versions of these document to develop templates that can be used quickly, if needed, to get TPs, Q&As, and a press release over to the White House/OMB. These would only be used in instances where we have made a significant change to the closure and need to alert the WH/OMB on an abbreviated timeline in order to meet our noon deadline for posting changes to the closure. I have not made any edits to the quote for Dr. L, but assume that it would be reworked a bit depending on the magnitude/location of the closure. I'm leaving that to you all and the process you've been using to get releases cleared.

I'm standing by to make adjustments, if needed, in the morning based on our 8am call. My blackberry died today, so I will only be checking email once later tonight. You can reach me on my personal cell phone [redacted b6] if you need me in the meantime.

Cheers,
Kelly

Kimball, Nicholas wrote:

> I think these documents can really be the templates, assuming most of the other circumstances don't change, just different boundaries of the closure. Then we can plug in numbers, tweak as needed and get it through clearance.
>
> Obviously if events change substantially we'd need to rework things to make it fit.

From: Costanza, Jennifer
Sent: Wednesday, May 19, 2010 6:27 PM
To: Denit, Kelly; Kimball, Nicholas
Cc: Sarri, Kristen; Hallberg, Amanda; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: RE: The just in case scenario

Templates, without numbers to clear in DOC and we'll insert numbers the next time we have a closure and be ready to get to WH within minutes. … that is my understanding anyway. Kris?

Jennifer Costanza

Office of the Secretary

Office of Legislative and Intergovernmental Affairs

1401 Constitution Ave., NW

Washington DC, 20230

Office: 202.482.1286

Cell: 202.285.0830

Fax: 202.482.4420

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, May 19, 2010 6:26 PM
To: Kimball, Nicholas
Cc: Sarri, Kristen; Hallberg, Amanda; Costanza, Jennifer; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: Re: The just in case scenario

Hi all,

I think I need some further clarity on what you all are expecting with this exercise. Chris just came back from the 5pm meeting and indicated you all are looking for a set of template TPs, Q&A's, and press release with blanks where the specific size/percent/etc. of the closure would go. He indicated you all were looking for this tonight in order for it to be shared up the chain, even without the numbers.

I thought I was supposed to provide updated TPs, Q&As, and press release, complete with the numbers (once a decision is made), as soon as possible in the morning.

Can you guys clarify exactly what you want me to put together? I'll make sure to work with Comms (Justin) on whatever is needed.

Cheers,
Kelly

Kimball, Nicholas wrote:

Release, etc below. Let me know if you have questions.

Contact: Kim Amendola **FOR IMMEDIATE RELEASE**

727-403-6533 May 18, 2010

NOAA Extends Fishing Closed Area to Portion of Loop Current as Precaution

More Than 81 Percent of Gulf Remains Open to Fishing

NOAA has extended the boundaries of the closed fishing area in the Gulf of Mexico into the northern portion of the loop current as a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will enter the loop current.

The closed area now represents 45,728 square miles, which is slightly less than 19 percent of Gulf of Mexico federal waters. This leaves more than 81 percent of Gulf federal waters— or nearly 195,000 square miles— still available for fishing. The closure will be effective at 6 p.m. EDT. Details can be found at http://sero.nmfs.noaa.gov/.

The newly closed area is more than 150 miles from the nearest port and primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.

”The BP oil spill is unprecedented and quickly changing. The administration’s response since the beginning has been aggressive, strategic, and science-based," said Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere and NOAA administrator. "As we expand the fishing closed area, we are doing what science demands of us and are acting with caution to ensure the safety of the seafood Americans will put on their dinner plates. We stand shoulder-to-shoulder with Gulf coast fishermen and their families during these challenging times.”

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the Gulf of Mexico. The current is also known as the Florida current as it flows through the Florida Strait and then into the Gulf Stream as it heads north to the east coast of the U.S. Both the location of the loop current and the location of the oil slick are dynamic. Both move around from day to day. Satellite imagery on May 17 indicates that the bulk of the oil is dozens of miles away from the loop current, but a tendril of light oil has been transported close to the loop.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood from inside and outside the closure area, as well as dockside- and market-based sampling.

“Due to the unprecedented and ongoing discharge of oil, FDA agrees that NOAA's closure of these federal waters is one appropriate public health

measure to prevent potentially unsafe seafood from being harvested and reaching consumers," said Dr. Margaret Hamburg, FDA commissioner. "We understand that it will be necessary to continually evaluate the boundaries as the situation evolves.

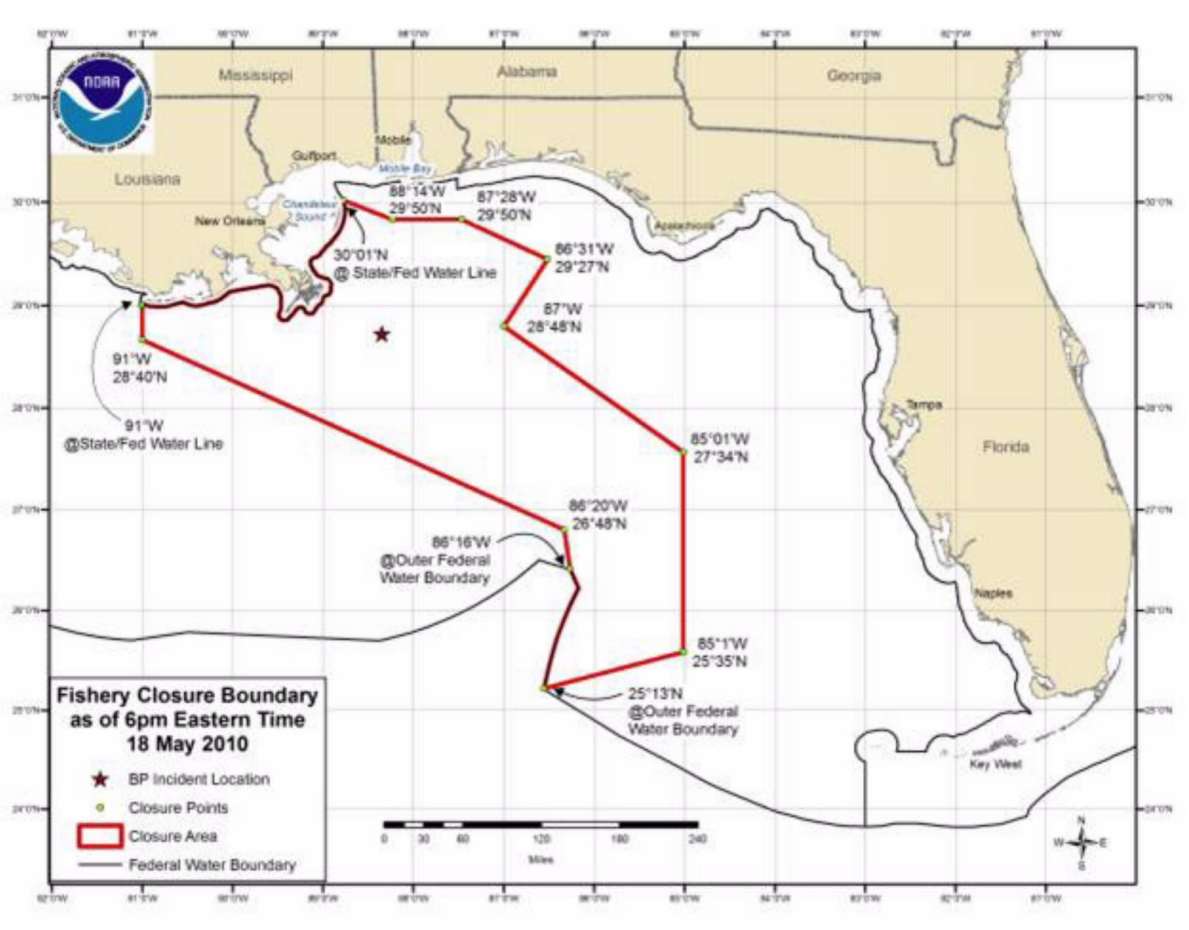
"FDA will also continue to work closely with NOAA on future decisions to reopen the closed fishery," she added.

According to NOAA, there are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than one billion pounds of finfish and shellfish in 2008.

Fishermen who wish to contact BP about a claim should call 800-440-0858.

NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov.



May 18, 2010 Fishery Closure Talking Points

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM, May 18, 2010.

The revised closure went into effect at 6 PM, May 18, and is 45,728 square miles (19% of the GOM EEZ).

Document ID: 0.7.19.588

This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

NOAA expanded the closure boundary to encompass the most conservative projected path of the oil, using the 72-hour trajectory and incorporating the full extent of uncertainty around that projection.

There are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than 1 billion pounds of finfish and shellfish in 2008 with a total landings value of $659 million.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety.

NOAA increased its monitoring and sampling efforts and is working closely with the Food and Drug Administration and the Gulf states to ensure seafood safety.

NOAA and FDA are working to re-align assets to implement a broad-scaled sampling plan.

The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

State governors and international colleagues have been alerted of the closure area expansion and the joint NOAA/FDA seafood sampling plan.

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the western Gulf of Mexico. It flows across the Gulf and then south toward the tip of Florida. It is known as the Florida Current as it flows between Florida and Cuba, and then merges into the Gulf Stream as it heads north up the East Coast of the U.S. This current is dynamic, and its location changes from day to day.

Currently, satellite imagery indicates the bulk of the oil is dozens of miles away from the loop current, but there is some small portion of the oil in the vicinity of the loop current.

In addition to satellite imagery, NOAA is making daily flights to monitor the spill

and predict its trajectory, and is dropping scientific instruments into the Gulf to measure surface and subsurface conditions. NOAA has also redeployed research vessels and other assets to the spill areas, and is working with universities and other federal agencies to collect scientific data about the location of the loop current and subsurface conditions.

The BP oil spill is unprecedented and dynamic. From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Q&A:

What is the size of the fisheries closure?

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM today, May 18, 2010. The revised closure will be effective at 6 PM this evening and is 45,728 square miles (19% of the GOM EEZ). This leaves more than 81 percent of Gulf federal waters – or nearly 195,000 square miles – still available for fishing.

Why did we expand?

Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will soon enter the loop current.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety. To ensure the safety of seafood harvested from the Gulf of Mexico, NOAA is working with the Food and Drug Administration to re-align its assets to implement a broad-scaled sampling plan. The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

Decisions to close or re-open areas to fishing are based on data indicating where oil has been present, its current extent, and projections of its trajectory over the next 72 hours.

NOAA has established a process to expedite modifications to the fishing closed area in the Gulf of Mexico, and to provide daily updates to the public about these changes. Boundaries of the fishing closed area could be modified daily, based on dynamic oil spill conditions.

What are the economic impacts?

This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some unknown degree.

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three

days out from the date of establishing the closure, and where the oil had been seen.

The goal of the closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

What is NOAA Fisheries Service doing to monitor and adjust the closed area?

From the beginning, the federal government has leveraged all available resources as part of an aggressive response to mitigate the impacts of this spill on fish, consumers, and the communities of the Gulf Coast.

This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.

This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

NOAA Fisheries Service, specifically, is closely monitoring the movement of the spill and has developed a protocol that supports swift agency action in response to new information on the location and extent of the spill and expected fishery impacts.

Our goal is to continuously update the dimensions of the closed area as needed to ensure fish and consumer safety without needlessly restricting productive fishing in areas that are not affected by the spill.

NOAA Fishery managers communicate each day with NOAA's Office of Response and Restoration (ORR). ORR provides three-day trajectory maps, as well as whatever information is available from overflight data regarding the actual location of the spill.

NOAA Fisheries Service then determines whether to modify the closed area boundaries – either by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

How does NOAA review potential fisheries closures under the new rule?

Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.

Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.

Any changes to the closed area boundary will take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.

NOAA Fisheries will open areas that were closed based on the oil spill trajectory if cumulative mapping shows no oil was ever in the area.

Why did NOAA Fisheries Service prohibit fishing in certain areas?

The area closed to fishing was determined to be affected by the Deepwater BP oil spill based on projections available at the time the decision to close the area was

made.

NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.

As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.

We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

RE-OPENING CLOSED FISHERIES

What is the criteria for re-opening fisheries?

The fishery will be reopened when it is determined that there is not a risk of food contamination or adulteration.

Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.

There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

Reopening sequence -

1. *No visible oil sheen observed on the water in the area to be opened;*

2. *No oil found in water analysis;*

3. *No oil found in sensory analysis;*

4. *No oil found in chemical analysis (verification step for sensory analysis).*

Will NOAA offer training or guidance to states as well as local industry?

NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.

NOAA has been participating on weekly calls hosted by FDA with state food regulatory officials to communicate its plans and coordinate efforts.

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

What did NOAA do to collect baseline samples? Are more baseline samples needed?

NOAA performed baseline sampling of seafood products for sensory analysis. These samples will be used for both harmonization of the NOAA and FDA seafood sensory experts and will be used as the baseline comparison when reopening samples are analyzed.

Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.

NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

NOAA Fisheries Service is continually monitoring the location of the oil to

modify the closed areas.

Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

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Cheers,
Kelly

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Thanks, Kris

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May XX, 2010 Fishery Closure Talking Points

- To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM, May XX, 2010.

- The revised closure went into effect at 6 PM, May XX, and is XX,XXX square miles (XX% of the GOM EEZ).

- This leaves more than XX percent of Gulf federal waters – or nearly XXX,XXX square miles – still available for fishing.

- NOAA expanded the closure boundary to encompass the most conservative projected path of the oil, using the 72-hour trajectory and incorporating the full extent of uncertainty around that projection.

- There are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than 1 billion pounds of finfish and shellfish in 2008 with a total landings value of $659 million.

- The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety.

- NOAA increased its monitoring and sampling efforts and is working closely with the Food and Drug Administration and the Gulf states to ensure seafood safety.

- NOAA and FDA are working to re-align assets to implement a broad-scaled sampling plan.

- The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

- State governors and international colleagues have been alerted of the closure area expansion and the joint NOAA/FDA seafood sampling plan.

Comment [k1]: This may or may not be true depending on the size/location of the expansion.

- The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the western Gulf of Mexico. It flows across the Gulf and then south toward the tip of Florida. It is known as the Florida Current as it flows between Florida and Cuba, and then merges into the Gulf Stream as it heads north up the East Coast of the U.S. This current is dynamic, and its location changes from day to day.

- Currently, satellite imagery indicates the bulk of the oil is [XXX miles away from] [in] the loop current, but there is some small portion of the oil in the vicinity of the loop current.

- In addition to satellite imagery, NOAA is making daily flights to monitor the spill and predict its trajectory, and is dropping scientific instruments into the Gulf to measure surface and subsurface conditions. NOAA has also redeployed research vessels and other assets to the spill areas, and is working with universities and other federal agencies to collect scientific data about the location of the loop current and subsurface conditions.

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- This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.

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- This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.

- As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.

- NOAA's response since the beginning has been aggressive, strategic, and science-based. The expansion of the fishing closed area is just one part of NOAA's action to ensure seafood safety. We are acting with an abundance of caution.

Contact: Kim Amendola

727-403-6533

FOR IMMEDIATE RELEASE

May XX, 2010

NOAA Extends Fishing Closed Area to Portion of Loop Current as Precaution

More Than XX Percent of Gulf Remains Open to Fishing

NOAA has extended the boundaries of the closed fishing area in the Gulf of Mexico into the northern portion of the loop current as a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers. Though the latest analysis shows that the bulk of the oil remains dozens of miles from the loop current, the new boundaries address the possibility that a tendril of light oil has entered or will enter the loop current.

The closed area now represents XX,XXX square miles, which is slightly less than XX percent of Gulf of Mexico federal waters. This leaves more than XX percent of Gulf federal waters—or nearly XXX,XXX square miles—still available for fishing. The closure will be effective at 6 p.m. EDT. Details can be found at http://sero.nmfs.noaa.gov/.

The newly closed area is more than XXX miles from the nearest port and [primarily in deep water used by pelagic longline fisheries that target highly migratory species, such as tuna and swordfish. Coastal fisheries, such as grouper, snapper and shrimp, will not be affected by the expansion of the closed area.]

”The BP oil spill is unprecedented and quickly changing. The administration’s response since the beginning has been aggressive, strategic, and science-based," said Dr. Jane Lubchenco, under secretary of commerce for oceans and atmosphere and NOAA administrator. "As we expand the fishing closed area, we are doing what science demands of us and are acting with caution to ensure the safety of the seafood Americans will put on their dinner plates. We stand shoulder-to-shoulder with Gulf coast fishermen and their families during these challenging times.”

The loop current is an area of warm water that comes up from the Caribbean, past the Yucatan Peninsula, and into the Gulf of Mexico. The current is also known as the Florida current as it flows through the Florida Strait and then into the Gulf Stream as it heads north to the east coast of the U.S. Both the location of the loop current and the location of the oil slick are dynamic. Both move around from day to day. Satellite imagery on May XX indicates that the bulk of the oil is dozens of miles away from the loop current, but a tendril of light oil has been transported close to the loop.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood from inside and outside the closure area, as well as dockside- and market-based sampling.

"Due to the unprecedented and ongoing discharge of oil, FDA agrees that NOAA's closure of these federal waters is one appropriate public health measure to prevent potentially unsafe seafood from being harvested and reaching consumers," said Dr. Margaret Hamburg, FDA commissioner. "We understand that it will be necessary to continually evaluate the boundaries as the situation evolves.

"FDA will also continue to work closely with NOAA on future decisions to reopen the closed fishery," she added.

According to NOAA, there are 3.2 million recreational fishermen in the Gulf of Mexico region who took 24 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than one billion pounds of finfish and shellfish in 2008.

Fishermen who wish to contact BP about a claim should call 800-440-0858.

NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov.

Fishery Closure Question and Answers Template

What is the size of the fisheries closure?

To address the possibility that oil has entered or will soon enter the loop current, NOAA followed the science and acted with caution by announcing an expansion of the fisheries closure area at 12 PM today, May XX, 2010. The revised closure will be effective at 6 PM this evening and is XX,XXX square miles (XX% of the GOM EEZ). This leaves more than 81 percent of Gulf federal waters – or nearly XXX,XXX square miles – still available for fishing.

Why did we expand?

Though the latest analysis shows that the bulk of the oil remains XX miles from the loop current, the new boundaries address the possibility that a tendril of light oil [has entered] [or will soon enter] the loop current.

The closure area expansion is one part of a pro-active stance that NOAA is taking to ensure public and seafood safety. To ensure the safety of seafood harvested from the Gulf of Mexico, NOAA is working with the Food and Drug Administration to re-align its assets to implement a broad-scaled sampling plan. The plan includes sampling seafood from inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

Decisions to close or re-open areas to fishing are based on data indicating where oil has been present, its current extent, and projections of its trajectory over the next 72 hours.

NOAA has established a process to expedite modifications to the fishing closed area in the Gulf of Mexico, and to provide daily updates to the public about these changes. Boundaries of the fishing closed area could be modified daily, based on dynamic oil spill conditions.

What are the economic impacts?

[This precautionary action to expand the closed area is not expected to have significant economic impacts on federal fisheries managed by the Southeast Region, such as grouper, snapper and shrimp, because those fisheries do not generally operate in that expanded area. However, it can be expected to impact fisheries for highly migratory species, such as tuna and swordfish, to some unknown degree.]

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

NOAA Fisheries Service closed federal fisheries within the oil spill area. The current federal fishery closure is based on the projected trajectory of the oil three days out from the date of establishing the closure, and where the oil had been seen.

The goal of the closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.

NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.

What is NOAA Fisheries Service doing to monitor and adjust the closed area?

- From the beginning, the federal government has leveraged all available resources as part

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- This has included tactics above water, below water, offshore, and close to coastal areas to collect, contain and disperse the oil to protect our vital coastlines.
- Every one of these techniques, as well as efforts to cap the leak at its source, have been based on science – weighing both the benefits and any adverse effects these efforts may have.
- This has included rigorous air and water monitoring by the EPA and multifaceted sediment and ocean life testing by NOAA, as well as the deployment of leading scientists to join the efforts of BP, a responsible party, to seal the leak.
- As we continue to respond with all hands on deck, the scientists representing our key federal agencies as well as partners in the scientific community and the private sector will continue to play a key role.
- NOAA Fisheries Service, specifically, is closely monitoring the movement of the spill and has developed a protocol that supports swift agency action in response to new information on the location and extent of the spill and expected fishery impacts.
- Our goal is to continuously update the dimensions of the closed area as needed to ensure fish and consumer safety without needlessly restricting productive fishing in areas that are not affected by the spill.
- NOAA Fishery managers communicate each day with NOAA's Office of Response and Restoration (ORR). ORR provides three-day trajectory maps, as well as whatever information is available from overflight data regarding the actual location of the spill.
- NOAA Fisheries Service then determines whether to modify the closed area boundaries – either by expanding the boundaries or reopening areas no longer affected – based on trajectory data.

How does NOAA review potential fisheries closures under the new rule?

- Under this framework, we review the trajectory data each morning and communicate our decision regarding whether to expand the closed area boundary (or maintain the current boundary) by 12 PM ET each day.
- Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.
- Any changes to the closed area boundary will take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.
- NOAA Fisheries will open areas that were closed based on the oil spill trajectory if cumulative mapping shows no oil was ever in the area.

Why did NOAA Fisheries Service prohibit fishing in certain areas?

- The area closed to fishing was determined to be affected by the Deepwater BP oil spill

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- NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and assure consumer confidence in Gulf of Mexico seafood.
- As the location of the oil shifts and moves, we would expect other states to do the same if a determination is made that an area is affected by oil.

What is NOAA's plan to assess the effect of the oil on seafood?

- NOAA Fisheries Service is working with the U.S. Food and Drug Administration to collect and evaluate seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.
- We are working with the U.S. Food and Drug Administration on plans to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is safe in areas affected by the spill. The combination provides strong assurance that seafood is safe for human consumption.

RE-OPENING CLOSED FISHERIES

What is the criteria for re-opening fisheries?

The fishery will be reopened when it is determined that there is not a risk of food contamination or adulteration.

Have NOAA and FDA agreed on the incident specific re-opening criteria for areas affected by the Deepwater BP Oil Spill?

- NOAA is working to complete an incident specific protocol for reopening areas impacted by the Deepwater BP Incident in consultation with the FDA.
- There is a specific sequence of events that are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.

  Reopening sequence -

  1. *No visible oil sheen observed on the water in the area to be opened;*
  2. *No oil found in water analysis;*
  3. *No oil found in sensory analysis;*
  4. *No oil found in chemical analysis (verification step for sensory analysis).*

Will NOAA offer training or guidance to states as well as local industry?

- NOAA and FDA provided guidance to states for how to conduct field collection samples as well as water samples for environmental analysis.
- NOAA has been participating on weekly calls hosted by FDA with state food regulatory

BASELINE SAMPLING, SAMPLING PROTOCOLS, AND SAMPLE ANALYSIS

What did NOAA do to collect baseline samples? Are more baseline samples needed?

- NOAA performed baseline sampling of seafood products for sensory analysis. These samples will be used for both harmonization of the NOAA and FDA seafood sensory experts and will be used as the baseline comparison when reopening samples are analyzed.
- Based on the volume of samples already collected the states are not asked to collect any additional baseline samples for sensory analysis at this time. If additional sensory samples are needed in the future NOAA will contact and coordinate with the states on an as needed basis.
- NOAA also collected baseline sampling of seafood products for chemical analysis in the offshore waters. NOAA coordinated the baseline sampling with state and academic partners as much as possible. The states may wish to perform their own baseline samples of seafood products within their jurisdictional waters.

Can NOAA consider reopening areas based on a seafood safety assessment before the oil spill is contained?

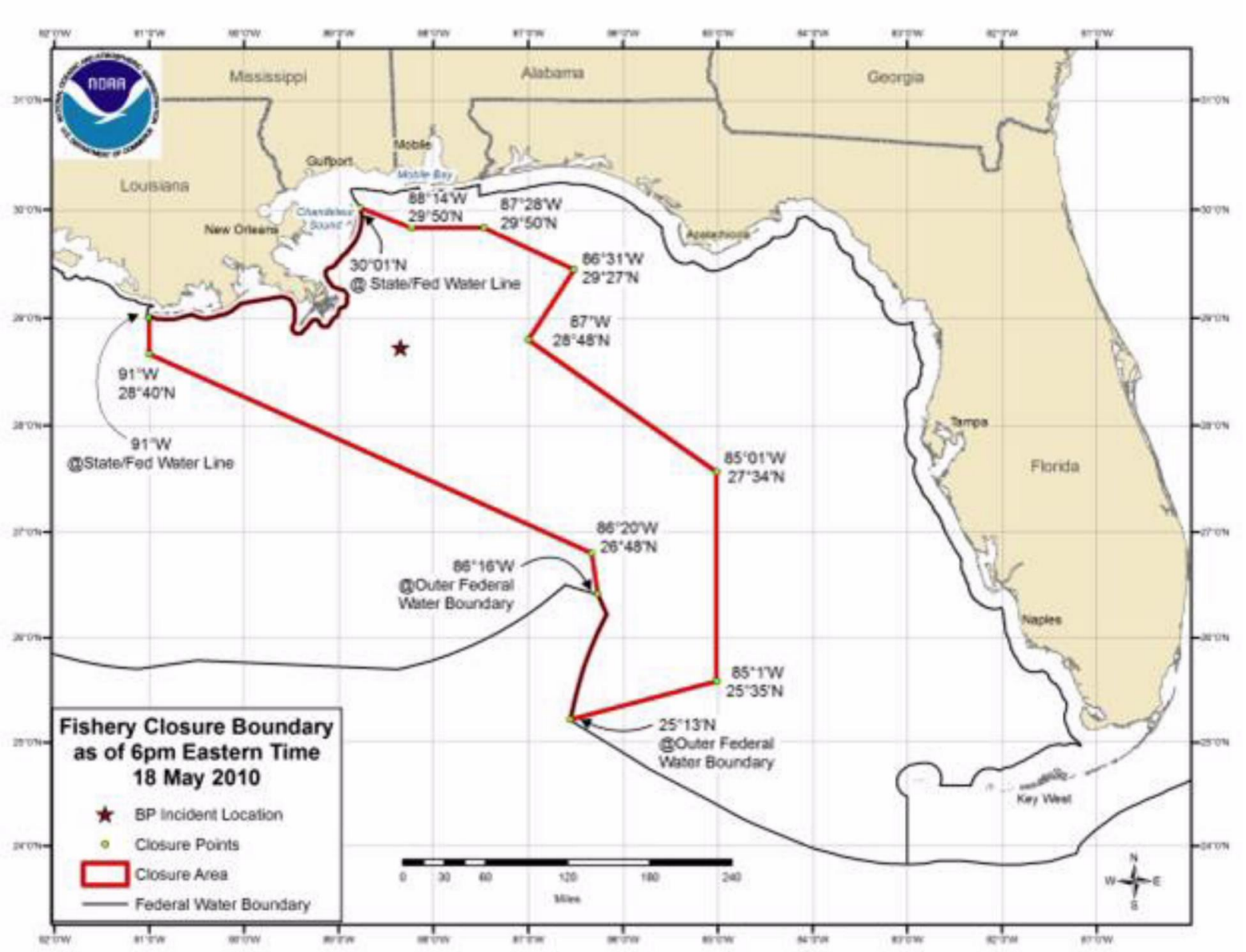
- NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.
- Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.

What is NMFS' plan for sensory and chemical analysis of seafood?

- The immediate plan is to collect baseline sensory samples and use these samples during training and mentoring efforts to be offered to each affected state.
- NOAA is in the process of developing screening methods to quickly assess contaminant loads in water and in seafood; e.g. shrimp, crabs, finfish.
- The standards that are applied for oil are based on current standards developed by the FDA. For dispersants it is likely that we will be developing new standards and are working with the FDA in the implementation of these new standards. We will be running these assays to determine when and where seafood is safe for the public. The protocols right now are being developed including the timing of providing these results to our resource managers and the public.

Why is both sensory and chemical analysis needed?

- The most effective method of determining acceptability of seafood from oil contaminated areas is sensory analysis. Sensory analysis (smelling, tasting and observing seafood) is a sensitive means of detecting oil contamination. Trained expert assessors are harmonized to the characteristics of the oil.
- Chemical analysis is used to verify the results because the possibility of error exists when humans are used as a testing mechanism.


Mississippi
Alabama
Georgia
Louisiana
Gulfport
Mobile
Mobile Bay
New Orleans
Chandeleur Sound
Apalachicola
Tampa
Florida
Naples
Key West
88°14'W
29°50'N
87°28'W
29°50'N
30°01'N
@ State/Fed Water Line
86°31'W
29°27'N
87°W
28°48'N
91°W
28°40'N
91°W
@State/Fed Water Line
85°01'W
27°34'N
86°20'W
26°48'N
86°16'W
@Outer Federal
Water Boundary
85°1'W
25°35'N
25°13'N
@Outer Federal
Water Boundary
Fishery Closure Boundary
as of 6pm Eastern Time
18 May 2010
BP Incident Location
Closure Points
Closure Area
Federal Water Boundary
0
30
60
120
180
240
Miles
N
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Received(Date): Thu, 20 May 2010 12:04:25 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Notes from May 20, 11 AM NRT Call
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>,_HDQ Policy Contacts <Policy.Contacts@noaa.gov>,_HDQ PCO Contacts <PCO.Contacts@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>, "Sarri, Kristen" <KSarri@doc.gov>

Below are notes from the May 20, 11 AM NRT call.

FOR OFFICIAL USE ONLY

National Response Team Call
May 20, 2010
11:00 AM

The next NRT meeting is May 21 at 11 AM.

Situation Status:
-Riser insertion tube tool has been in place for a couple of days and is capturing 3,000 barrels/day.
-One area of minor concern is that another crack has formed a few inches away from the leak in the riser at the top of the BOP.
-Well kill option is still most preferred option for controlling lease. Window for deployment is now between May 23rd and 25th. Process will take 2-3 days to complete.
-Six burns happened yesterday. Weather will continue to be conducive for burning today.
-11,800 barrels of oil-water mixture was collected yesterday through skimming.
-300,000 gallons of surface dispersants were applied by vessel yesterday.
-35,000 gallons of subsurface dispersants were injected.
-1.4 million feet of boom has been assigned with another 1.4 million staged.
-Shoreline impacts (in the form of isolated ribbons of black oil) are noticed in the LA marshes.
-15 tarballs were collected in Key West this week. The first 5 tests are negative; we are awaiting results from the last 10.
-Containment donuts will be used in the LA marsh area and active clean up will take place so that oil does not go further inland.

Communications:
-Administrator Jackson is doing tv interviews locally and nationally.
-Secretary Salazar is doing the morning shows.
-Working to get best spokespeople out across agencies.
-Amending fact sheets to keep them current.

Intergovernmental:
-Loop current was the focus of today's Governor's call. East Coast Governors' call went well yesterday.
-Working closely with communications and NIC working groups on flow rate, subsurface plume, etc.

Congressional:
-5 hearings occurred this week; at least 4 hearings will happen next week.
-Senator Durbin is going to the region with a number of Senators on Monday.

Legal:
-Final review is occurring on a letter from Administrator Jackson and Secretary Napolitano to BP demanding to make public any information related to spill.
-Yesterday, a briefing was held for Republican staff on Administration's legislative package. Questions focused on liability cap, retro-activity to any change to cap, and if the spill can be classified as more than one incident.

Received(Date): Thu, 20 May 2010 13:20:04 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Re: asap
To: "Sarri, Kristen" <KSarri@doc.gov>, lmurphy@doc.gov,"dwh >> \"'dwh.staff@noaa.gov'\"" <dwh.staff@noaa.gov>

NOAA's experts have been assisting with the response from the beginning, providing coordinated scientific, weather, and biological response services when and where they are needed the most. NOAA is working to assess the distribution of subsurface dispersed oil. NOAA is looking at traditional techniques of sample grabs, using AUVs and gliders to collect data and evaluating acoustic approaches that will allow us to quickly assess the presence or absence of dispersed oil. A combination of NOAA and non-NOAA vessels will be used for this. NOAA is also closely monitoring the small portion of the oil, consisting of sheens and unobserved tarballs, that has reached the loop current. Each day scientists are looking at drifting buoys and other instruments dropped in the slick area (by NOAA P-3 aircraft and by ships) and in between the slick and the loop current, satellite images (sea surface height and temperature), numerical models and data coming in from government, academic and industry vessels transiting between the souther part of the slick and the loop current. In anticipation of a potential change in the top of the loop current, NOAA is deploying airborne expendable bathy thermographs, known as AXBTs, to look at the structure and temperature of the loop current. NOAA has also taken an active stance to ensure public and seafood safety. To ensure the safety of seafood harvested from the Gulf of Mexico, NOAA is working with the Food and Drug Administration to re-align its assets to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood inside and outside of the closure area, as well as dockside and market-based sampling. Also, NOAA is increasing its monitoring of the biological implications of oil and dispersants.

.

Sarri, Kristen wrote:
>
> Could you all get a brief one paragraph description to Latoya of all
> the scientific work NOAA is doing in the Gulf – seafood, loop, plume,
> etc. for the report to the WH.
>
> Thanks, Kris
>

Received(Date): Thu, 20 May 2010 18:38:47 -0400
From: Michael Jarvis <Michael.Jarvis@noaa.gov>
Subject: Re: Q and As for dwh
To: Margaret Spring <Margaret.Spring@noaa.gov>
Cc: "'Amanda.Hallberg@noaa.gov'" <Amanda.Hallberg@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,"'glenn.boledovich@noaa.gov'" <Glenn.Boledovich@noaa.gov>,"'John.Gray@noaa.gov'" <John.Gray@noaa.gov>,Jessica Kondel <Jessica.Kondel@noaa.gov>
Q&As - May 2010 Oil Spill Hearings (Revised).doc

Hi Margaret and all,

Attached here is the set of Q&As developed for this week's two oil spill hearings. Jessica Kondel and I worked in parallel with NMFS and NOS Line Office staff to pull together many of these responses. The Q&A on Hurricanes and oil spills was made from the already cleared talking points and the submersibles/remotely operated vessels Q&A was provided by OAR (via Jonathan Kelsey).

This process was done separately than the fact sheets that are being developed. For the Q&As from NOS, they were cleared at Line Office level (including GC), then went to HQ from there. We will work to keep in touch with what other materials are being cleared to update these going forward. I'm starting to work on the briefing binder for Dr. Lubchenco, including a taking fresh look at these Q&As (coordinating with Jessica), but fortunately our testimony and much of the other background materials are the same as for this week's two hearings.

Thanks,
Mike

Margaret Spring wrote:
> Amanda or Mike,
>
> Can you send the current version to dwh.staff@noaa.gov?
>
> Can you also explain your process for updating them - and who the leg POCs are for doing that?
>
> We are trying to have one set of tps and q and as for a few key topics:
>
> Plume
> Loop
> Seafood Safety
> Fishery Closures
> Flow Rate
> Dispersants
> Science plan/sampling
> Asset deployment
> Wildlife impacts
>
> Looking at what you have already will help,
>
> For each topic, can you also identify your POC?
>
> We need to stay on top of the most current information, and are trying to develop a simple mechanism for that.

>
> Thanks,
>
> Margaret
>

--
Michael G. Jarvis
Congressional Affairs Specialist
Office of Legislative and Intergovernmental Affairs
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Office: 202-482-3595

Index Of Questions And Answers – Deepwater Horizon Oil Spill Hearings

Oil Spill Response and Restoration Funding 5

What is NOAA's Office of Response and Restoration funding in the FY2011 President's Budget? 5
Given NOAA's Office of Response and Restorations staffing reconfiguration in FY2008-2009, how did the elimination of contractors and the reassignment of FTEs impact OR&R's ability to respond to the Deepwater Horizon spill? 7
If Congress funds NOAA's Office of Response and Restoration at levels below the President's request of $19.5 million, isn't it a safe assumption that the ecological sensitivity map backlog will grow? How much will it cost to update all of the maps that need to be updated? 9
Does NOAA have funding for oil spill research in the FY2011 President's Budget? . 10
What are you doing to improve your oil spill modeling? 11

Legislation 12

If NOAA received annual appropriations from the Oil Spill Liability Trust Fund, how would you spend it? 12
Does NOAA support the Damage Assessment and Restoration Fund becoming interest bearing? 14
What changes in legislative authorities would be needed to improve 15
NOAA's preparedness and response capabilities to events such as 15
Deepwater Horizon? 15

Response Capacity 16

NOAA is notified of over 200 spills/year. How often do spills occur 16
simultaneously? What is NOAA's capacity to handle two spills at the 16
same time? 16
Are there examples of new technologies that could help reduce response time and/or environmental impact from a spill like the Deepwater Horizon? 18

Natural Resource Injuries 20

Based on NOAA's forecasts on how the oil is moving and will continue to move, what are some of the potential impacts on marine protected areas in the Gulf of Mexico, such as the Florida Keys and Flower Garden Banks national marine sanctuaries? Will they be among the priorities NOAA recommends for "protection from spreading oil" and "appropriate clean-up actions" in order to minimize impacts on these nationally significant places? 20
What are the long term consequences of this oil spill? What are the 22
effects to LA, MS, and FL? 22
Explain the process used to compensate the public for harm to natural 25

Document ID: 0.7.19.1319.1

resources and their human uses as a result of a spill? 25
How long does damage assessment and restoration take? Will the public get compensated? 27
What does NOAA do with funds recovered through the Natural 28
Resource Damage Assessment (NRDA) process? 28
How has NOAA been able to respond to affected wildlife? 29
What is the impact of oil on marine mammals and sea turtles? 32
What species are most vulnerable to oil contamination? 34
How long to metabolize oil for different species (finfish, shellfish, etc)? 35
Do we understand how the oil spill will impact the development of the 36
Dead Zone this year? Do we anticipate the emergence of the Dead Zone 36
impacting response efforts in any way? 36
When will the Dead Zone forecast from NOAA be announced? Will the 38
oil spill in the Gulf of Mexico influence this forecast? 38

Socio-economic Impacts 39

What are the socio-economic impacts of this spill? What ways can we 39
improve the way we relay these socio-economic impacts to tourism, ... 39
recreational fishing, small businesses, and other economic consequences 39
to the public? 39

Tools 41

I was surprised to read in the press that the Federal Government is so dependent on the private sector for submersibles and remotely operated undersea vehicles. What are NOAA's capabilities in this area and should they be strengthened? Couldn't such equipment be put to beneficial use for NOAA's Ocean Exploration and other programs when not responding to emergencies? Do you have partnerships with academia and other institutions relating to submersibles? 41
How do trajectory models work 43

MMS Leasing Plans 44

As part of the interagency process, did NOAA sign off on the MMS' 44
Draft Proposed and Preliminary Revised leasing plans? What role does 44
NOAA plays in the offshore drilling permitting process? 44
What is NOAA's role in approving oil/gas exploration? 45
Secretary Salazar recently announced that MMS would be divided into 47
two separate entities, one for safety and environmental enforcement and 47
one for leasing, permitting and revenue functions. What actions can 47
NOAA take to support the proposed reorganization of MMS into two 47
entities, one for safety and environmental enforcement and one for 47
leasing, permitting and revenue functions? 47
What was NOAA's role in approving the drilling from the Deepwater Horizon rig? 49

Document ID: 0.7.19.1319.1

Dispersants 51

How do dispersants work? 51
Are there any studies on short term and long term impacts of dispersants on fisheries, shrimp and oysters? 53
What is the long-term impact of the dispersant on fisheries, shrimp and oyster communities? 54
What are the consequences of the Barrier Island/dredging proposal to the flow of oil and oceanographic patterns? 56

Fisheries Closure/Safe Seafood 58

What is NOAA's role in determining whether seafood is safe following an oil spill? What is FDA's role? 58
NOAA is taking a precautionary approach to seafood with the surveillance and monitoring program but, it is also telling people the seafood is fit for human consumption. How do you reconcile that? 60
What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf? 61
How often are the fisheries closures modified? 62
What is NOAA's plan to assess the effect of the oil on Gulf seafood? How will the results from the surveillance and monitoring program be used? 63
What are the criteria for re-opening fisheries? Have the re-opening methodology been used in previous spills? Has FDA approved this approach? 64
Can NOAA consider re-opening areas before the oil spill is contained? 65
While implementation of the National Ocean Policy and CMSP would not be able to prevent incidents such as the Deepwater Horizon oil Does the Secretary plan to declare a fishery disaster? Will that provide economic assistance for the fishermen of the affected states? 66

Ocean Policy Task Force 68

I understand the President has received the recommendations from the 68
Ocean Policy Task Force. What actions is the Administration planning 68
to take in response to this report and how has the Deepwater spill play 68
into that? 68
How would the Ocean Policy Task Force's recommended National Ocean Policy and Framework for Coastal and Marine Spatial Planning help in this situation? 70
Currents and Weather Concerns 71
Why hasn't more oil hit the shoreline? 71
What happens if the oil moves into the loop current? Is the Atlantic 72
Coast in danger? What can we expect if that occurs? 72
I am deeply concerned for the upcoming hurricane season. How will the oil slick interact with a hurricane? 74

Flow Rate 76

Document ID: 0.7.19.1319.1

Do you think the current estimate of a 5,000 barrel release from the well site is technically defensible, and if not what would you suggest as an approach to refine such estimates? 76
What can we do to prevent this from happening again? 77

Document ID: 0.7.19.1319.1

Oil Spill Response and Restoration Funding

What is NOAA's Office of Response and Restoration funding in the FY2011 President's Budget?

Answer:

- **The FY 2011 President's Request includes $19.5M for the Office of Response and Restoration (OR&R) base.**

- **OR&R responds to, protects, and restores habitats, communities and economies injured by oil spills, hazardous substance releases, damage to sanctuary resources, ship groundings and related injuries to natural resources.**

Budget Summary (Dollars in Thousands):

Line Item Name	FY09 Enacted	FY10 Enacted	FY11 Base	FY11 Program Change	FY11 Request
Response and Restoration Base	**$19,266**	**$20,134***	**$19,518**	**$0**	**$19,518**

*In FY10 NOAA requested these funds under the Response and Restoration Base, however Congress enacted them under both the Response and Restoration Base and Damage Assessment Program.

Background:

- OR&R is the primary NOAA office which responds to oil spills, ship groundings and hazardous material releases. OR&R provides scientific support to the U.S. Coast Guard for spills and technical assistance to other agencies for hazardous material releases for responses to oil or hazardous substance releases.

- NOAA responded to 200 spill events in 2009. Following an oil spill, NOAA provides scientific expertise to determine spill trajectory and movement, identification of sensitive habitats to protect, and recommendations for cleanup alternatives. NOAA also assesses and restores resources injured by the oil spill and compensates for the public's lost use of those resources.

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- From FY2004 – 2008, OR&R's base budget appropriation was approximately 30 percent below the President's budget request. Specific impacts included a reduction in:

    - Capacity to respond to two simultaneous medium spill events (which has occurred on two occasions over the past 5 years) or one large spill;

    - Developing and updating oil prediction models, Environmental Sensitivity Index (ESI) maps, and socioeconomic valuation tools; and

    - Conducting and participating in preparedness and response training and drills, such as the highly successful Safe Seas Exercises that contribute so effectively to elevating response capacity at the regional level.

- Due to base appropriations below the President's Request in the past, OR&R had relied heavily on earmarks, reimbursable funding, and one-time projects in order to be able to cover their labor and programmatic costs. OR&R underwent an extensive budget planning effort to achieve a fiscally sustainable program in FY 2009 that would allow for the execution of its core mission responsibilities. This included reducing labor costs, as well as discretionary spending (i.e. travel and training).

Document ID: 0.7.19.1319.1

Given NOAA's Office of Response and Restorations staffing reconfiguration in FY2008-2009, how did the elimination of contractors and the reassignment of FTEs impact OR&R's ability to respond to the Deepwater Horizon spill?

Answer:

- **It is clear to me that NOAA's Office of Response and Restoration's ability to respond will be exceeded by the size and extent of this spill.**

- **In the past we have stated that NOAA would be unable to respond to two simultaneous medium spill events or one large spill such as the Exxon Valdez or Hurricane Katrina. The Deepwater Horizon spill has exceeded everyone's expectations in regards to duration and size.**

- **However, I can assure you that the response at NOAA is a team effort that extends beyond NOAA's Office of Response and Restoration to every line office of NOAA. We have teams and personnel with applicable skills from across the agency volunteering to assist and provide needed support.**

- **The elimination of positions in ORR has impacted the organization, but was required to better align ORR with available funding resources by reducing overall labor costs. This has reduced the number of staff available to be called upon in a significant event such as the Deepwater Horizon.**

Background:

- Starting in FY 2008, OR&R underwent an extensive budget planning effort and took a number of actions to reduce spending, including eliminating 11 contractor positions due to budget shortfalls. In order to achieve a fiscally sustainable program in FY 2009, it was necessary for OR&R to make additional staffing changes to reduce labor costs and allow sufficient funding to carry out high priority response and natural resource trustee requirements. As such, OR&R took the following actions in FY 2009:
    - Offered reassignment to 10 OR&R FTEs to other NOAA/NOS Programs. 2 FTE accepted other positions in OR&R, 6

Document ID: 0.7.19.1319.1

accepted other positions in NOS, and 2 FTE resigned from NOAA to accept other positions.
    - Eliminated 9 non-mission critical contractor positions
    - Converted 5 mission critical contractor positions to FTEs
    - Reduced all non-labor programmatic budgets to minimal levels necessary to effectively meet OR&R's core mission responsibilities.
- OR&R is currently composed of 102 FTEs, 31 contractors, and 3 NOAA Corps officers.

- Due to base appropriations below the President's Request between 2004 and 2008, OR&R relied heavily on congressionally directed projects, reimbursable funding, and one-time projects in order to be able to cover all labor and programmatic costs.

- Funding from EPA has been cut by 60% since 2005, and the funding for the Pribilofs clean-up concluded in FY 2008. In addition, due to base appropriations below the President's Request, OR&R had been living off of one-time projects, on-going earmarks, EPA funding, Pribilofs, and NOS-level assistance since FY 2005. These funding sources were either reduced or no longer available.

- While there were impacts to the organization, the FY 2008-2009 staffing plan better aligned ORR with available funding resources.

Document ID: 0.7.19.1319.1

If Congress funds NOAA's Office of Response and Restoration at levels below the President's request of $19.5 million, isn't it a safe assumption that the ecological sensitivity map backlog will grow? How much will it cost to update all of the maps that need to be updated?

Answer:

- **Development of Environmental Sensitivity Index (ESI) maps has most often been accomplished by using a variety of funding sources, both federal and state. At present, 21 of 50 ESI Atlases are greater than 10 years old (including the Great Lakes).**

- **The estimated cost to update the ESI Atlases that are 10 or more years old is approximately $11.0 million. As in past years, updates will likely be accomplished over time with a mix of federal and partner funds.**

- **The President's FY 2011 Request for the Office of Response and Restoration is $19.5 million, which will allow NOAA to update one ESI atlas.**

Background:

- Environmental Sensitivity Index (ESI) maps provide information that helps reduce the environmental, economic and social impacts from oil and chemical spills.

- Spill responders rely on NOAA's ESI maps to identify priority areas to protect from spreading oil, develop cleanup strategies to minimize impacts to the environment and coastal communities, and reduce overall cleanup costs.

Document ID: 0.7.19.1319.1

Does NOAA have funding for oil spill research in the FY2011 President's Budget?

Answer:

- **NOAA does not have a request for oil spill research funds in the President's FY2011 Budget Request.**

- **NOAA's most recent effort in oil spill research was through a partnership with the Coastal Response Research Center (CRRC) at the University of New Hampshire. The last year of that funding was FY2007.**

Background:

- OR&R received funding for the CRRC through an earmark from FY2004 – FY2007

Document ID: 0.7.19.1319.1

What are you doing to improve your oil spill modeling?

Answer:

- **As the Deepwater Horizon spill is demonstrating, there is a need to enhance 3D models to better understand how oil behaves and disperses within the water column when released at deep depths. This is an emerging advancement in modeling that can greatly enhance response operations and mitigation efficacy.**

- **The FY 2010 enacted budget for the Office of Response and Restoration included a $1.4M program increase (as requested in the President's Budget) to develop tools and techniques related to response and natural resource damage assessment with a strong focus on building and maintaining state-of-the-art 3D models to predict contaminant movement in the environment.**

Background:

FY 2010 is the first year these funds were requested and appropriated, so implementation has just begun this year.

Document ID: 0.7.19.1319.1

Legislation

If NOAA received annual appropriations from the Oil Spill Liability Trust Fund, how would you spend it?

Answer:

- **Currently NOAA does not receive annual appropriations from the Trust Fund.**

- **With funding from the Oil Spill Liability Trust Fund, NOAA priorities would be to:**

  - **Enhance our level of readiness to respond to oil spills;**

  - **Develop cost-effective approaches and tools that will improve effectiveness in response; and**

  - **Support focused and applicable research that addresses oil spill impacts.**

Background:

- Senator Cantwell introduced in the USCG Reauthorization Bill (S. 1194) on June 4, 2009. It includes language that authorizes NOAA to access up to $15M of funds from the OSLTF.

- On April 27, 2010, Senator Cantwell, along with other members from the Commerce Committee sent a letter to Appropriations Committee members requesting the transfer of $15M from the OSLTF to NOAA's Office of Response and Restoration to support it oil spill planning, research, and response obligations.

- Other federal agencies that receive an annual appropriation from the OSLTF include: Minerals Management Service ($7M); Environmental Protection

Document ID: 0.7.19.1319.1

Agency ($16M); US Coast Guard (($46M); Department of Transportation ($15M); and Department of Treasury ($70K).

Document ID: 0.7.19.1319.1

Does NOAA support the Damage Assessment and Restoration Fund becoming interest bearing?

Answer:

- **NOAA is supportive of strengthening the Damage Assessment and Restoration Fund in ways that could help buffer against potential cost increases in restoring NOAA's trust resources.**

- **If interest were generated, it could be used exclusively to restore natural resources harmed by specific incidents and to reimburse the natural resource trustee agencies for damage assessment costs.**

- **Restoration projects are often complex and may take years to completely implement. The final settlement with the Responsible Party does factor in some contingencies and inflation. However, issues do arise (e.g. changes in material costs, hurricanes, permitting issues, etc) that can increase the total cost of the restoration project. Funds available through interest on the account would help offset these costs and ensure that planned restoration was fully completed.**

Background:

- S 2859 – the Coral Reef Conservation Act of 2000 Reauthorization bill establishes an account (to be called the Emergency Response, Stabilization, and Restoration Account) in the Damage Assessment Restoration Revolving Fund. The Secretary of Commerce may request the Secretary of the Treasury to invest amounts received and deposited into the fund into public debt securities. The interest earned by such investments shall be available for use by the Secretary without further appropriation and remain available until expended.
- This bill was introduced in December 2009 and has been reported favorably from the Committee on Commerce, Science, and Transportation.

Document ID: 0.7.19.1319.1

What changes in legislative authorities would be needed to improve NOAA's preparedness and response capabilities to events such as Deepwater Horizon?

Answer:

- **Emergency authorities were submitted in the FY 2010 supplemental. For the longer term NOAA and the Administration will be assessing the Oil Pollution Act and other legislative mechanisms for changes and improvements.**

- **We look forward to working with Congress on these proposals in the near future.**

Document ID: 0.7.19.1319.1

Response Capacity

NOAA is notified of over 200 spills/year. How often do spills occur simultaneously? What is NOAA's capacity to handle two spills at the same time?

Answer:

- **NOAA responds regularly to simultaneous minor spills. The U.S. Coast Guard classifies minor offshore spills as those less than 10,000 gallons (238 barrels).**

- **On average, every 2-4 years, NOAA has had to implement overlapping field operations on a medium to large sized spill.**

- **An example of two simultaneous large spills are the M/T *ATHOS I (Athos)* accident in New Jersey, which released nearly 265,000 gallons of crude oil into the Delaware River and nearby tributaries and the M/V *Selendang Ayu,* which ran aground and broke in half off Unalaska Island in the Aleutian Islands. This cargo vessel released an estimated 354,218 gallons of oil into the environment.**

- **In addition, NOAA responded to multiple spills resulting from Hurricane Katrina in 2005.**

- **In the past NOAA has stated that if two simultaneous medium spill events were to occur, or one large spill such as the Exxon Valdez, NOAA would have difficulty providing the level of response expected by the nation.**

- **Responding to the Deepwater spill does represent a significant challenge for NOAA. Currently, NOAA has every Scientific Support Coordinator (SSC) in the country working on the Deepwater spill. NOAA currently has three oceanographers who**

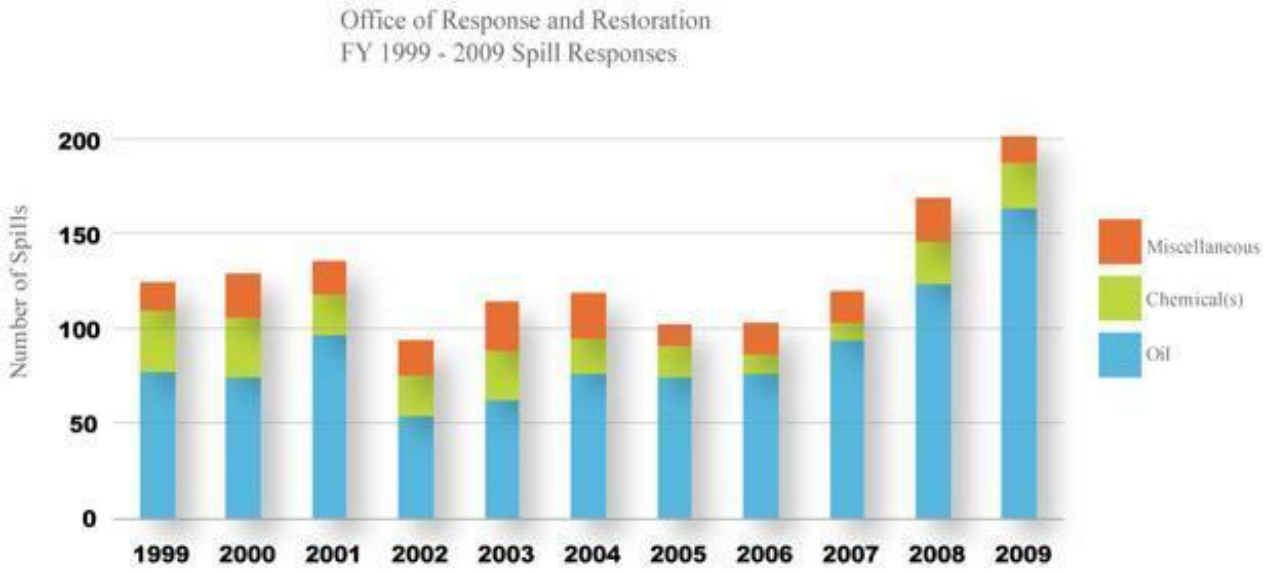
Document ID: 0.7.19.1319.1

do trajectory modeling. These individuals are generating modeling products twice a day. NOAA has enlisted scientists and specialists who retired from the agency to support the agency with the Deepwater Horizon response, along with numerous personnel with applicable skills from across the agency.

Background:

- U.S. Coast Guard's offshore spill size classifications:
  - MINOR, less than 10,000 gallons (238 barrels);
  - MEDIUM, 10,000 to 99,999 gallons (238 to 2,380 barrels); and
  - MAJOR, 100,000 gallons (2,381 barrels and greater).

- These size categories are for coastal and offshore waters and are based solely on spill volume. Of the 2,645 petroleum spills between 1971 and 2007, 2,583 (97.7%) were MINOR in size. These MINOR spills were responsible for 25,477 (15.5%) of the barrels spilled.



Document ID: 0.7.19.1319.1

Are there examples of new technologies that could help reduce response time and/or environmental impact from a spill like the Deepwater Horizon?

Answer:

- **ERMA - Environmental Response Management Application** (ERMA®) is a web-based information management application that facilitates preparedness, response and restoration decision-making for oil spills and for other coastal hazards. ERMA integrates real-time observations (e.g., NOAA GeoRSS, weather, vessel traffic, oil spill trajectories, etc.) with archived data sources in an easy to use, Google based format to aid in evaluating resources at risk, visualizing oil trajectories, and for planning rapid tactical response operations, injury assessment and habitat restoration.

- **Enhance 3D Oil Fate and Trajectory Models –** Improve present forecasting ability and develop capability to forecast fate and transport for non-floating materials. Understanding how oil behaves and disperses within the water column when released at deep depths, such as happened with the Deepwater Horizon oil spill, is a emerging advancement in modeling that could greatly enhance response operations and mitigation efficacy.

- **HF Radar –** High frequency (HF) radar can be used to measure ocean surface currents and provide real-time current information to oil spill modelers. This real-time data can be correlated to winds and tidal currents among other physical phenomena; thereby, enhancing the accuracy of NOAA oil spill trajectory and fate models.

Background:

- *ERMA* - ERMA was developed jointly by the University of New Hampshire (UNH) and the Office of Response and Restoration (OR&R). The UNH-NOAA team used Portsmouth, NH as its prototype pilot site in 2008. ERMA is now fully operational for the New England Area. ERMA was used as the primary data visualization tool during the recent Spill of National Significance (SONS) Exercise in New England to provide situational awareness

Document ID: 0.7.19.1319.1

and up-to-date information to the Incident Coordination Center (ICC). ERMA also was used to share on-scene data, and to provide players a live view of trajectories, progression of deployed response strategies, sightings of oiled and un-oiled wildlife, overflight validation of on-water and shoreline oiling, vessel positions and field photos. Certain components of ERMA are being used in the Gulf of Mexico for the response to this spill; however, it is not fully operational.

- *3D Models* – The information produced by 3D models is critical to improving our understanding of the potential short- and long-term effects of oil at depth. The ability to model where submerged oil at depth could go would be extremely valuable for an offshore spill response operation where dispersants are applied, such as the Deepwater Horizon.
- *HF Radar* - Through the collaborative efforts of U.S. Integrated Ocean Observing System (IOOS), two of three radars along the northern Gulf of Mexico coast were quickly re-established and made operational and now all three are delivering surface current data.

Document ID: 0.7.19.1319.1

Natural Resource Injuries

Based on NOAA's forecasts on how the oil is moving and will continue to move, what are some of the potential impacts on marine protected areas in the Gulf of Mexico, such as the Florida Keys and Flower Garden Banks national marine sanctuaries? Will they be among the priorities NOAA recommends for "protection from spreading oil" and "appropriate clean-up actions" in order to minimize impacts on these nationally significant places?

Answer:

- **NOAA is deeply concerned about the effects of this oil on marine ecosystems in the Gulf of Mexico, which includes sensitive areas and resources, such as those found in the national marine sanctuaries you mentioned. We are assessing the impacts this oil could have on these marine protected areas, and other coastal communities, wetlands, and beaches.**

- **NOAA's forecast window is 72 hours, and we are closely monitoring the oil slick's proximity to the Gulf Loop Current. Based on our latest forecast X, no oil has been observed in the Loop Current and currently the closest patch of oil is roughly X miles away from it.**

- **Oil is not expected to move into the Loop Current during our current three day forecast period, which is updated twice daily. At this time the oil is not anticipated to impact the Florida Keys or Flower Garden Banks national marine sanctuaries.**

- **However, if oil was to reach the Loop Current, oil could reach the Florida Straits (and, therefore, the Florida Keys NMS) NOAA would continue working with the Unified Command in this response. Sanctuary managers also are prepared to work with NOAA's many line offices, particularly the Office of Response and Restoration, to determine the nature and extent of any**

Document ID: 0.7.19.1319.1

possible injuries to natural resources and the restoration actions that would be needed to recover from these losses.

Document ID: 0.7.19.1319.1

What are the long term consequences of this oil spill? What are the effects to LA, MS, and FL?

Answer:

- **The continuing release of oil from the Deepwater Horizon well-head jeopardizes human livelihoods and public health and natural resources. The potential long-term consequences of this spill include impacts to—**
    - **marine/coastal birds and waterfowl**
    - **marine mammals and sea turtles**
    - **fish and invertebrates**
    - **deep-sea coral and coral reefs**
    - **surface and water column quality**
    - **habitat, such as mangroves, beaches, salt marshes, mudflats, wetlands, sediments and seagrasses**
    - **human health**
    - **recreation, such as wildlife watching, swimming, boating, canoeing, fishing**
    - **commercial and recreational fisheries**

Background:

Potential Long-Term Impacts:

- **Coastal bird and waterfowl populations.** An estimated 75% of all U.S. waterfowl pass through or nest in Louisiana's three million acres of wetlands. The timing of this spill is of particular concern as the Spring nesting season is now occurring and birds are on nests throughout the Gulf coastal states. Results from past studies of oil impacts to birds have found evidence of mortality, slow recovery, and divergent population trends in many taxa which use shoreline and nearshore habitats where oil is likely to persist.

- **Fish populations.** During past oil spills in the Gulf of Mexico, NOAA has documented direct toxic impacts to commercially important aquatic fauna, including blue crabs, squid, shrimp and different finfish species. The economic impact to the commercial and recreational fishing industries could be extensive. In 2008, commercial fishermen in the Gulf of Mexico harvested 1.27 billion pounds of finfish and shellfish that earned $659 million in total landings revenue.

Document ID: 0.7.19.1319.1

There were 3.2 million recreational fishermen who took a fishing trip in the Gulf of Mexico region, and they took 24 million fishing trips in 2008.

There is a wide variety of fish species in the Gulf of Mexico. The major impacts will be on nearshore species or species that may be currently spawning. Juvenile red snapper are common on mud bottoms in the northern Gulf, particularly off Texas through Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems.

- **Shrimp populations.** The economic impact of the oil spill on shrimp could be extensive. The Gulf region landings of shrimp are the nation's largest with 188.3 million pounds or 73 percent of the national total (Fisheries of the US, 2008). Louisiana led all Gulf states in landings with 89 million pounds with a dockside value of $130.6 million in 2008, followed by Texas (63.8 million pounds, dockside value of $157.2 million), Alabama (17 million pounds, dockside value of $38.4 million), Florida's West Coast (9.9 million pounds, dockside value of $23.3 million), and Mississippi (8.6 million pounds, dockside value of $17.1 million).

- **Crabs.** There are three species of crabs in the Gulf of Mexico area: blue crab, Gulf stone crab, and stone crab. Blue crab occurs almost exclusively in state waters with peak spawning occurring in August-September. Eggs and larvae develop and settle in the estuaries until crabs reach harvestable size in April-May. Blue crabs are the most economically valuable crab species for the region. Louisiana lands approximately 26 percent of the total blue crabs for the nation or 41.6 million pounds in 2008, with a dockside value of $32 million. Landings and dockside values for the other Gulf States were: West Florida, 2.7 million pounds, $3.3 million, Texas, 2.6 million pounds, $2.3 million, Alabama, 1.8 million pounds, $1.5 million, Mississippi, 450,000 pounds, $447,000.

- **Oysters.** The Gulf region leads the nation in the production of oysters, some 67 percent of the nation's total. The following landings and dockside value was produced in 2008 in the Gulf states: Louisiana, 12.8 million pounds, $38.8 million; Texas, 2.7 million pounds, $8.83 million; Mississippi, 2.6 million pounds, $6.87 million; West Florida, 2.5 million pounds, $5.47 million; Alabama, 72,776 pounds, $243,414.

- **Sharks.** Shark species are distributed throughout the Gulf region with the highest abundances in the central Gulf from Louisiana to Alabama. Blacktip sharks are particularly abundant in this region and are one of the most commercially important shark species in the Gulf. During spring and summer months several shark species of management concern use coastal nursery areas, and those areas can be expected to be impacted. In particular, blacktip sharks, spinner sharks,

Document ID: 0.7.19.1319.1

Atlantic sharpnose sharks, and bull sharks are regularly captured during coastal gill net surveys and bottom longline surveys.

- **Marine mammal and sea turtle populations.** Long-term, chronic effects such as decreased survival and lowered reproductive success may occur. Cetaceans, manatees and sea turtles may be exposed to chemicals in oil in two ways: internally (eating or swallowing oil, consuming prey containing oil based chemicals, or inhaling of volatile oil related compounds) and externally (swimming in oil or dispersants, or oil or dispersants on skin and body). Additionally sea turtles may experience oiling impacts on nesting beaches and eggs through chemical exposures resulting in decreased survival to hatching and developmental defects in hatchlings.

- **Habitat Impacts.** Oil can persist in and degrade habitat for decades. The effect of the Deepwater Horizon oil spill on coastal erosion will be determined by how much oil reaches these habitats, and how long it stays there. Oil resting on vegetated coastal shorelines could cause the vegetation to become stressed and die; this could cause the roots to die, weakening marsh soils. Weakened marsh soils would then be at risk of accelerated erosion from waves and storms.

- **Human Health Impacts.** While numerous studies have been done to determine short- and long-term impacts of oil spills on natural resources, less well-known are short- and long-term impacts on human health. One 2010 analysis of several human health studies strongly encouraged the need for biomonitoring humans exposed to oil. The human health studies reviewed in this analysis evaluated skin and mucous irritations, mental health problems, damage to DNA, and endocrine alterations.

Document ID: 0.7.19.1319.1

Explain the process used to compensate the public for harm to natural resources and their human uses as a result of a spill?

Answer:

- **The Natural Resource Damage Assessment (NRDA) is a legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources and their human uses that occur as a result of an oil spill.**

- **NRDA is conducted by designated state and federal natural resource trustee agencies (this will likely include NOAA, DOI/USFWS, DOI/NPS, LA, MS, AL and FL)**

- **Trustees assess both the injured natural resources and the public's lost use of those resources, such as boating, recreational fishing and hunting, canoeing, and swimming. Restoration projects may include improving fish habitat, increasing public access, improving shorelines, acquiring land for conservation purposes, and building new or improving existing trails.**

- **There are 3 main steps to the NRDA process:**
    1. **Preassessment** – Trustees determine whether injury to public trust resources has occurred.
        - For the Deepwater Horizon Spill this process has already begun
    2. **Restoration Planning** – Trustees quantify injuries and identify possible restoration projects
    3. **Restoration Implementation** – The final step is to implement restoration projects and monitor effectiveness. The trustees seek costs from the Responsible Party for all 3 steps. If the RP does not agree to damages, the trustee may bring suit or submit claims for damages to the Oil Spill Liability Trust Fund, administered by the USCG.

Background:

Document ID: 0.7.19.1319.1

- Natural resource trustee agencies (including NOAA, DOI, state agencies, and Indian tribes) are responsible for trust resources as designated by the National Contingency Plan. The Secretary of Commerce (acting through NOAA) is a trustee for the following natural resources and their supporting ecosystems:
    - Marine fishery resources
    - Anadromous fish
    - Endangered species and marine mammals
    - Resources of National Marine Sanctuaries and National Estuarine Research Reserves

Document ID: 0.7.19.1319.1

How long does damage assessment and restoration take? Will the public get compensated?

Answer:

- **Although the concept of assessing injuries may sound straightforward, full understanding of complex ecosystems, the services these ecosystems provide, and the injuries caused by oil and hazardous substances takes time—often years.**

- **The season the resource was injured, the type of oil or hazardous substance, and the amount and duration of the release are some factors that affect how quickly resources are assessed and restoration and recovery occurs.**

- **The rigorous scientific studies that are necessary to prove injury to resources and services—and withstand scrutiny in a court of law—may also take years to implement and complete. The Natural Resource Damage Assessment process ensures an objective and cost-effective assessment of injuries, and that the public's resources are restored.**

Background:

- NOAA and co-trustees will implement economic and scientific studies to assess the injuries to natural resources and the public's loss of services/uses. These studies are used to develop a restoration plan comprised of projects to speed recovery of injured resources and compensate the public for lost uses of those resources.

- Trustees work with the public to identify, select, and on occasion even implement restoration projects. Examples of restoration include replanting wetlands, improving fishing access sites, improving fish habitat, and restoring salmon streams. The responsible party pays the costs of assessment and restoration and is often a key participant in implementing the restoration.

Document ID: 0.7.19.1319.1

What does NOAA do with funds recovered through the Natural Resource Damage Assessment (NRDA) process?

Answer:

- **NOAA is authorized to seek restoration costs and reimbursement of reasonable costs for conducting a damage assessment from parties responsible for releasing oil or hazardous substances or those who injure sanctuary resources.**

- **When funds from such recoveries are maintained by NOAA, they are placed in the Damage Assessment and Restoration Revolving Fund (DARRF).**

- **Funds that are deposited in the DARRF have a designated purpose and are subject to rigorous accounting.**

- **Damages recovered in NRDA cases are used exclusively to restore natural resources harmed by specific incidents and to reimburse the natural resource trustee agencies for damage assessment costs.**

Background:

- NOAA and other natural resource trustees have recovered over $500 million for the restoration of coastal and marine resources since the program's inception in 1990 – approximately one-third of that amount is for restoration in OPA-related incidents.
- The rest has been used to restore injuries caused by hazardous substances other than oil, under CERCLA, or physical harm to Marine Sanctuary resources under the National Marine Sanctuaries Act.
- In many cases, either a portion or all of the restoration is implemented by the responsible party, with government oversight.

Document ID: 0.7.19.1319.1

How has NOAA been able to respond to affected wildlife?

Answer:

- **NOAA has been working with the existing infrastructure of the Marine Mammal Stranding Network and the Sea Turtle Salvage and Stranding Network. Along the Gulf coast, having the networks in place has ensured that there are pre-identified, skilled personnel in place to respond to reports of potentially impacted marine mammals and sea turtles, and there are existing facilities that can be augmented for oiled wildlife response.**

- **A well-structured regional coordination mechanism through NMFS and USFWS has led to good communication and timely responses. The National Networks and the American Zoological Society provide a roster of trained and experienced personnel that can be drawn upon to give depth to the response and allow for rotation of personnel.**

- **<u>Sea Turtles</u>: The total number of sea turtles documented since 30 April within the "designated spill area" is 162 (8 live, of which 2 died in rehab, 154 dead).**
    - **To date, 72 dead turtles have been examined in the laboratory Of all live and dead sea turtles evaluated to date, no visible external or internal signs of oiling have been found.**

- **The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle from April 30th through May 16th is 156 (LA – 36, MS – 83, AL – 26, FL - 11). This is much higher than the number of turtle strandings that have been documented in recent years in Louisiana, Mississippi, and Alabama during this time frame.**
    - **For example, from 2005 – 2009 the number of turtle strandings for the month of May has ranged from 1 to 15 in Louisiana, 0 to 13 in Mississippi, and 1 to 15 in Alabama. In the Florida panhandle, from 2003 – 2007,**

Document ID: 0.7.19.1319.1

the number of strandings in May has ranged from 13 to 37.

- **There has been an increase in awareness and human presence in the northern Gulf of Mexico, which likely has resulted in some of the increased documentation of stranded turtles; however, we do not believe this factor fully explains the increase.**

- **<u>Marine Mammals</u>: To date, thirteen (13) dead dolphins have been confirmed since 30 April within the "designated spill area."**
    - **Of the dead stranded dolphins collected to date, one (1) has been fresh enough to conduct a full necropsy, seven (7) have had partial necropsies (e.g., sample and tissue collection) performed, and five (5) were too autolyzed to allow for evaluation.**

- **Of all dead marine mammals evaluated to date, no external or internal signs of oiling has been found in or on any animal.**

- **For bottlenose dolphins, there was a higher than normal stranding rate from Jan 1 to April 15, 2010 prior to this event in Mississippi (34 total dolphins, compared to a historical average of 13.25 animals for the same time period) and Louisiana (41 animals in 2010 vs. 11 in the historical average). Since April 30th, the stranding rate in Louisiana is higher than the historic numbers, but this may be a reflection of increased detection and reporting and the lingering effects of the earlier observed spike in strandings.**

- **To date, no visible evidence of oil has been documented externally or internally in marine mammals and sea turtles that have been examined. We are collecting tissue samples for chemical analyses and histopathology, to assist in the determination of whether oil or dispersants are associated with these mortalities. These are not simple tests, and will take quite some time to complete.**

Document ID: 0.7.19.1319.1

Background:
NOAA Fisheries had several pre-existing protocols and trainings that have aided in the response to the DWH spill. These include;

- A guidance document, "Marine Mammal Oil Spill Response Guidelines" was developed in 2007 under a contract supplied by the Marine Mammal Health and Stranding Response Program. Stranding Network members across the country received this guidance and accompanying training on appropriate procedures and protocols when dealing with live and dead marine mammals that may have been impacted by oil.
- Similar guidance was developed by NOAA's OR&R in 2003 called "Oil and Sea Turtles: Biology, Planning and Response."
- Additional guidance is contained in NOAA's OR&R 2002 report, "Managing Seafood Safety after an Oil Spill."
- We should have had a protocol regarding federal fisheries closures worked out well in advance with FDA based on the 2002 OR&R report.

Document ID: 0.7.19.1319.1

What is the impact of oil on marine mammals and sea turtles?

Answer:

- **Oil is a mixture of chemicals, all of which may have different effects on marine animals and the combination may be even more hazardous. In addition, some of the chemicals and methods used to clean up oil spills may also have effects on marine animals. The toxicity or harmful effects of the oil are dependent upon:**
  - **• the mixture and types of chemicals that make up the oil or are used to clean up the oil,**
  - **• the amount of exposure (dose for internal exposures or time for external exposures),**
  - **• the route of exposure (inhaled, ingested, absorbed, or external), and**
  - **• the biomedical risk factors of the animal (age, sex, reproductive stage, and health status).**

- **Direct contact with of petroleum compounds or dispersants with skin may cause skin irritation, chemical burns, and infections within the marine mammals and sea turtles.**

- **Inhalation of volatile petroleum compounds or dispersants may irritate or injure the respiratory tract which may lead to inflammation or pneumonia.**

- **Ingestion of petroleum compounds may cause injury to the gastrointestinal tract, which may affect the animals' ability to absorb or digest foods.**

- **Absorption of petroleum compounds or dispersants may damage liver, kidney, and brain function as well as causing anemia and immune suppression.**

- **Long term chronic effects such as decreased survival and lowered reproductive success may occur.**

Document ID: 0.7.19.1319.1

- **The Marine Mammal and Sea Turtle Stranding Networks have protocols and procedures in place for responding to live animals that are exposed to oil spills, and animals brought into rehabilitation facilities are provided veterinary care to remove oil and treat any related health effects.**

Document ID: 0.7.19.1319.1

What species are most vulnerable to oil contamination?

Answer:

- **Marine invertebrates are most vulnerable, particularly bivalves such as oysters and clams.**

- **NOAA research has shown that marine invertebrates (e.g., oysters, shrimp, crab) are more prone than finfish to accumulate potentially toxic substances after oil exposure. It is important to note that bivalves (clams and oysters) have the potential to accumulate the highest levels because they have the lowest capacity for metabolizing petroleum hydrocarbons. Shrimp and crabs are generally known to metabolize petroleum hydrocarbons slower than fish and marine mammals but possibly faster than mollusks.**

- **NOAA research has shown that oil-derived compounds tend to be readily metabolized by animals with backbones (e.g. fish, mammals). Consumption of edible flesh from finfish after an oil spill generally does not pose a risk to consumers within a short amount of time (days) after an area is cleared of oil depending on the species of fish. However, to demonstrate that consumers should have confidence, it is important to show that while exposure has occurred (analysis of bile) there are low levels of oil-derived compounds in muscle.**

Document ID: 0.7.19.1319.1

How long to metabolize oil for different species (finfish, shellfish, etc)?

Answer:

- **Much is unknown regarding specific effects on specific species. In general, we know that:**
  - **NOAA research has shown that marine invertebrates (e.g., oysters, shrimp, crab) are more prone than finfish to accumulate potentially toxic substances after oil exposure. It is important to note that bivalves (clams and oysters) have the potential to accumulate the highest levels because they have the lowest capacity for metabolizing petroleum hydrocarbons. Shrimp and crabs are generally known to metabolize petroleum hydrocarbons slower than fish and marine mammals but possibly faster than mollusks.**
  - **NOAA research has shown that oil-derived compounds tend to be readily metabolized by animals with backbones (e.g. fish, mammals). Consumption of edible flesh from finfish after an oil spill generally does not pose a risk to consumers within a short amount of time (days) after an area is cleared of oil depending on the species of fish. However, to demonstrate that consumers should have confidence, it is important to show that while exposure has occurred (analysis of bile) there are low levels of oil-derived compounds in muscle.**

Document ID: 0.7.19.1319.1

Do we understand how the oil spill will impact the development of the Dead Zone this year? Do we anticipate the emergence of the Dead Zone impacting response efforts in any way?

Answer:

- **Recent oil flow trajectories have oil approaching sites where the Mississippi River outflow occurs. It is likely that water containing oil will intersect with this outflow and influence the dead zone.**

- **At this time it is unknown what effect the oil spill will have on the size and extent of the Gulf of Mexico Dead Zone (DZ). Scientific theories exist about how the interaction may exacerbate the DZ and other posit the oil spill lessen the severity or extent of the DZ.**

- **How the oil may exacerbate the DZ:**
  - Oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing across the ocean surface, thereby replenishing water column oxygen concentrations.
  - In addition, microbes in the water which break down oil and dispersants also consume oxygen – which could lead to further oxygen depletion. It is also possible that zooplankton (the microscopic grazers of algae) could be impacted, allowing more hypoxia-fueling algae to grow.
  - There is potential that the stress of the dead zone and the oil spill will be additive – meaning each stressor may increase the susceptibility to the harmful effects of the other.

- **How the oil may lessen the severity or extent of the Dead Zone:**
  - The large, near-surface algal blooms that ultimately result in hypoxic conditions could be reduced if the oil and/or dispersant are toxic to the algae or reduce the light penetration required for algal growth.
  - If such a reduction in algal growth occurs on a large enough scale, it is possible that this process could reduce the size and/or severity of the dead zone.

Document ID: 0.7.19.1319.1

- **As part of NOAA's longstanding and ongoing research into the causes and impacts of the dead zone in the Northern Gulf of Mexico, efforts will be made this year to evaluate the complex interactions between hypoxia and oil spills.**

Background:

- Hypoxic zones, or low oxygen areas, develop near the mouth of the Mississippi River every summer as a result of excess nutrients which are introduced principally via the Mississippi River.

- Excess nutrients trigger algal blooms that are eventually decomposed by oxygen-consuming bacteria. The result in the bottom waters of the Gulf is low oxygen or no oxygen conditions that are stressful and sometimes lethal to oxygen-dependent marine organisms.

- NOAA is funding (through the Northern Gulf of Mexico Hypoxia Program) a number of research cruises this spring and summer that are designed to collect data on essential physical, chemical, and biological properties in the waters west of the Mississippi Rivers.

Document ID: 0.7.19.1319.1

When will the Dead Zone forecast from NOAA be announced? Will the oil spill in the Gulf of Mexico influence this forecast?

- **For the past several years, NOAA has issued a "Dead Zone forecast" in the late spring of the expected size of the hypoxic zone in the Northern Gulf of Mexico in late July.**
- **Given the many complexities and uncertainties surrounding the impact of the oil spill on the processes that affect hypoxia, NOAA will not be able to account for the effects of the oil spill in the models used to forecast the size of this year's hypoxic zone.**
- **However, a summary of the latest understanding on potential influences will be provided along with the model forecast.**

Background:

- The size of the dead zone fluctuates throughout any given season depending on amount of freshwater inflow, currents and winds. The hypoxic area in the Gulf of Mexico has more than doubled in size since the late 1980s. The average size of the dead zone over the past five years is 6,000 square miles.
- The interagency Gulf of Mexico/Mississippi River Watershed Nutrient Task Force has a goal to reduce or make significant progress toward reducing this dead zone average to 2,000 square miles or less by 2015. The Task Force uses a five year average due to relatively high interannual variability.
- The dead zone is fueled by nutrient runoff, principally from agricultural activity, which stimulates an overgrowth of algae that sinks, decomposes, and consumes most of the life-giving oxygen supply in the water. The Gulf of Mexico dead zone is of particular concern because it threatens valuable commercial and recreational Gulf fisheries that generate about $2.8 billion annually.

Document ID: 0.7.19.1319.1

Socio-economic Impacts

What are the socio-economic impacts of this spill? What ways can we improve the way we relay these socio-economic impacts to tourism, recreational fishing, small businesses, and other economic consequences to the public?

Answer:

- **NOAA serves as a trustee on behalf of the public for coastal and marine resources. After an oil spill, NOAA conducts a Natural Resource Damage Assessment (NRDA)—a legal process—to assess and restore injured natural resources and the public's lost uses of these resources. The responsible party is liable for both assessment and restoration costs.**

- **Under OPA, NOAA may estimate the following types of economic impacts and identify appropriate restoration projects to compensate the public for lost use.**
  Recreational activities, including—
  - **boating**
  - **fishing**
  - **shellfishing**
  - **swimming**
  - **diving**
  - **windsurfing**
  - **hunting**
  - **canoeing**
  - **wildlife viewing**
  - **beachgoing**
  - **biking**
  - **picnicking**

- **In addition, as part of NRDA, commercial losses to fishing and maritime transportation, and cultural losses to tribes are assessed as well.**

Document ID: 0.7.19.1319.1

- **In several past natural resource damage assessments, the responsible party worked cooperatively with the trustees—greatly enhancing data sharing among the parties and with the public. For Deepwater, NOAA economists have recently initiated data collection efforts. Trustees are still in the preliminary stage of information gathering. NOAA and co-trustees are considering how best to share information related to economic uses.**

Background:

The Oil Pollution Act of 1990 (OPA)
Under OPA, two types of liability are assigned for releases of oil or hazardous substances: responsibility for cleanup of the environment (which is overseen by the lead cleanup agency) and responsibility for addressing injury to natural resources (which is overseen by natural resource trustees). Natural resource trustees include tribal governments as well as state and federal agencies. As a natural resource trustee, NOAA acts on behalf of the public to protect and restore coastal and marine resources and their services. Natural resources include fish, plants, birds, other wildlife and their habitats, soil, and both surface and groundwater.

Under OPA, services (or natural resource services) means "the functions performed by a natural resource for the benefit of another natural resource and/or the public….Potential categories of injury include, but are not limited to, adverse changes in: survival, growth, and reproduction; health, physiology and biological condition; behavior; community composition; ecological processes and functions; physical and chemical habitat quality or structure; and public services."

Document ID: 0.7.19.1319.1

Tools

I was surprised to read in the press that the Federal Government is so dependent on the private sector for submersibles and remotely operated undersea vehicles. What are NOAA's capabilities in this area and should they be strengthened? Couldn't such equipment be put to beneficial use for NOAA's Ocean Exploration and other programs when not responding to emergencies? Do you have partnerships with academia and other institutions relating to submersibles?

Answer:

- **NOAA's Office of Ocean Exploration and Research supports advancements in undersea technology (submersibles, remotely operated vehicles, autonomous undersea vehicles) for ocean exploration and research purposes through a combination of ownership, leasing, and partnerships with academia.**
- **While the value of these vehicles for research, observation, and monitoring of subsea habitats (i.e. methane hydrates) is high, they are not ideally designed or equipped for oil industry repair/response work.**
- **Industry vehicles may be used for research purposes, but the costs of purchase, support personnel, maintenance, and operational ship time have precluded support for more of these assets.**
- **Undersea vehicles used by the oil industry are more robust and powerful than research ROVs. They are designed to carry heavier payloads, specialized tools (including heavy duty manipulators) for valve and construction work, large volumes of hydraulic fluid, and redundant, back-up power systems, and to operate 24/7 in extreme conditions.**
- **There are approximately 300-350 work class ROVs (4000M capability) in the Gulf; dozens are readily available on industry vessels conducting work in the Gulf on any particular day. A work class ROV costs @ $5.5M to build, and $8K/day to operate. Research ROVs typically support different specialized tool packages and lighter weight and workload capabilities.**
- **Research ROVs are not a desirable tool for oil response operations due to the danger of proximity to powerful leaks**

Document ID: 0.7.19.1319.1

(10,000 psi), limited bottom time and maneuverability, and limited power and tool capability.

Background

Current OER funded capabilities include:

- Two 2000M submersibles (Pisces IV and V): owned by NOAA and operated via cooperative agreement by the University of Hawaii's Hawaii Undersea Research Laboratory (HURL)
- One Remotely Operated Vehicle owned by NOAA, dedicated to operation from the NOAA Ship *Okeanos Explorer*
- 2200 M Explorer class autonomous undersea vehicle (deep mapping), a 2000 M Seabed class autonomous undersea vehicle (video/photomosaicing) and a 2000M remotely operated vehicle: operated through cooperative agreement from NOAA between OER and the University of Mississippi/University of Southern Mississippi (assets are employed in research on a methane hydrate observatory site 8 NM from the oil spill site)

NOAA engages with other academic institutions, agencies, and industry to lease undersea assets for specific exploration and research projects, including:

- Woods Hole Oceanographic Institution's National Deep Submergence Facility (NDSF): 4500M Alvin submersible, 4500 M Jason remotely operated vehicle, 2500M Sentry autonomous undersea vehicle
- Navy Undersea Warfare Center (Newport RI and Panama City, FL): a small fleet of 100 and 600 M autonomous undersea vehicles
- Harbor Branch Oceanographic Institution at Florida Atlantic University: 1000M Johnson Sea Link submersible
- Delta Oceanographics: 300M Delta submersible
- University of Connecticut: 1000M remotely operated vehicle
- University of North Carolina, Wilmington: 300 M remotely operated vehicle, Pelagia glider

Document ID: 0.7.19.1319.1

How do trajectory models work?

Answer:

- **Trajectory modeling uses a mathematical model to predict the movement of spilled oil. The application of any model or mathematical procedure to describe the movement of spilled oil or other pollutants A model's usefulness depends on the value of its input data, its software design, and how its results are interpreted.**

- **NOAA's trajectory model (GNOME / General NOAA Operational Modeling Environment) is used to investigate the effects of different pollutants and environmental conditions on trajectory results. GNOME is used to—**
  - **predict how wind, currents, and other processes might move and spread oil spilled on the water**
  - **learn how predicted oil trajectories are affected by inexactness ("uncertainty") in current and wind observations and forecasts**
  - **see how spilled oil is predicted to change chemically and physically ("weather") during the time that it remains on the water surface**

- **This model provides a best guess trajectory along with an estimate of uncertainty as all models represent a simplification of the real world and are subject to error.**

- **Remote-sensing, visual overflights by trained observers and surface drifters are often used in concert with trajectory analysis for a more complete understanding of the movement of oil. The former is useful in calibrating trajectory predictions, which can help to direct the (often expensive) observing aircraft to look for oil, and help identify false-positive observations. A spill trajectory analysis with real data collected on oil location and on-scene measurements of winds and currents using buoys or drifters will reduce the errors in trajectory prediction.**

Document ID: 0.7.19.1319.1

MMS Leasing Plans

As part of the interagency process, did NOAA sign off on the MMS' Draft Proposed and Preliminary Revised leasing plans? What role does NOAA plays in the offshore drilling permitting process?

Answer:

- **NOAA does not have final approval authority for MMS leasing plans. However, NOAA does play an important role in the MMS process by providing comments on MMS' plans, programs, and NEPA documents. NOAA's comments are based on our extensive science, management, and stewardship expertise related to oceans, coasts, and marine ecosystems. They are also related to our diverse legislative mandates to protect living marine resources.**

- **Separate from our comments on the MMS planning process, NOAA also conducts environmental consultations and/or authorizations related to oil and gas activities. These can include Endangered Species Act Section 7 consultations, Essential Fish Habitat consultations, National Marine Sanctuary consultations, and Marine Mammal Protection Act authorizations.**

Document ID: 0.7.19.1319.1

What is NOAA's role in approving oil/gas exploration?

Answer:

- **NOAA does not permit offshore drilling, MMS issues permits allowing oil and gas companies to drill pursuant to the Outer Continental Shelf Lands Act.**

- **The Marine Mammal Protection Act allows NOAA (and the USFWS) to authorize the incidental take of marine mammals incidental to a specific activity, including oil and gas activities, provided NOAA can make certain findings and set forth permissible methods of taking and requirements pertaining to mitigation.**

- **The Endangered Species Act requires federal to consult with NOAA Fisheries on activities that may affect listed species. That requirement would extend to MMS or other federal agencies that permit offshore drilling.**

- **MMS may also be required to consult with NOAA under the Magnuson-Stevens Fishery Conservation and Management Act. Section 305(b)(2) of the MSA requires all Federal agencies to consult with NOAA on all actions authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat.**

Background:
MMPA: The Marine Mammal Protection Act prohibits the "take" of marine mammals, it also allows for NOAA (or the U.S. Fish and Wildlife Service (USFWS) – for a subset of species under their jurisdiction) to provide, *upon request*, an authorization to take marine mammals incidental to a specified activity, providing NMFS can make certain findings and sets forth the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking. So, if an O&G company, or MMS by virtue of giving the company a permit, believed that the act of conducting drilling activities were likely to result in a "take" of marine mammals – either the O&G company or MMS could elect to request an incidental take authorization (ITA) from NOAA allowing them to take marine mammals.

Document ID: 0.7.19.1319.1

ESA: The Endangered Species Act requires any federal agency that authorizes, funds, or carries out actions that may affect endangered or threatened species or designated critical habitat to consult with NOAA Fisheries. That requirement would extend to MMS or other federal agencies (e.g., the Army Corps of Engineers within state waters) that permit offshore drilling.

MSRA: MMS may be required to consult with NOAA under the Magnuson-Stevens Fishery Conservation and Management Act. Section 305(b)(2) of the MSA requires all Federal agencies to consult with NOAA on all actions authorized, funded, or undertaken by the agency that may adversely affect

EFH. Sections 305(b)(3) and (4) direct NOAA to provide EFH Conservation Recommendations to the Federal agencies on actions that affect EFH. Section 305(b)(4)(B) requires Federal agencies to respond to NOAA's comments in writing.

Document ID: 0.7.19.1319.1

Secretary Salazar recently announced that MMS would be divided into two separate entities, one for safety and environmental enforcement and one for leasing, permitting and revenue functions. What actions can NOAA take to support the proposed reorganization of MMS into two entities, one for safety and environmental enforcement and one for leasing, permitting and revenue functions?

Answer:

- **NOAA welcomes the opportunity to expand its collaboration with DOI and MMS, building on our historical relationship and efforts to address the crisis in the Gulf.**

- **The opportunity is ripe for MMS to look for new or expanded partnership with other federal agencies to support scientific and environmental assessments.**

- **We believe NOAA's role as an "honest broker" of scientific and technical information and source of reliable information to the public and media, makes NOAA a logical partner to support MMS missions and mandates, and we look forward to expanding this partnership in the wake of the Deepwater spill.**

Background:

As the Federal agency responsible for regulating energy production (oil and gas as well as renewable energy) on 1.7 billion acres of the Outer Continental Shelf, MMS lease sales and royalties bring in an average of $13 billion a year. The current proposal is to reorganize MMS to create a new Office of Safety and Environmental Enforcement, which will be separate from the office that will oversee drilling permits and the collection of federal royalties, in an effort to avoid real or perceived conflict with respect to these functions. It remains unclear whether the new safety and environmental office will review all drilling proposals and can exercise a veto over them, or will merely enforce federal standards once offshore energy projects are in operation. There has also been discussion of reorganizing and making MMS an independent agency, with the separation

Document ID: 0.7.19.1319.1

of functions proposed above, by members of the House Committee on Oversight and Government Reform.

Given the desire to provide a greater degree of separation between MMS's regulatory oversight and revenue collection responsibilities, the opportunity is ripe for MMS to look for new or expanded partnership with other federal agencies to support scientific and environmental assessments associated with existing and proposed energy development on the OCS.

NOAA is home to considerable resources and expertise regarding marine systems and processes, and the opportunity exists for MMS to rely more heavily on NOAA in providing some of these services. In addition, NOAA is in home to the Integrated Ocean Observing System (IOOS), the backbone of which is a network of 11 regional systems consisting of state, local, academic and private sector partners. The spill provides an opportunity to highlight the benefits a comprehensive ocean and coastal monitoring and observing system would provide to the nation—particularly in light of the dearth of physical and biological information and models that have hampered the response effort in the Gulf.

Document ID: 0.7.19.1319.1

What was NOAA's role in approving the drilling from the Deepwater Horizon rig?

Answer:

- **In 2007, NOAA issued the latest biological opinion covering MMS' Five-Year Outer Continental Shelf Oil and Gas Leasing Program (2007-2012) in the Central and Western Planning Areas of the Gulf of Mexico.**

- **This programmatic opinion covered all legal activities including, seismic surveying, construction, development and production drilling, production platforms, pipelines, vessel traffic and helicopter use associated with all MMS permitted activities.**

- **Ultimately, we concluded that the activities mentioned above were not likely to jeopardize the continued existence of listed turtles (leatherback, loggerhead, green, hawksbill, and Kemp's ridley), Gulf Sturgeon, and sperm whales.**

- **Although we did analyze the potential impacts of oil spills in the biological opinion, we not authorize any takes of listed species because the discharge of oil is prohibited under the Clean Water Act.**

- **Other than this programmatic consultation, there was not a more specific consultation that would cover Deepwater Horizon.**

- **Additionally, no MMPA authorization was given for the 2007 lease sale plan. The recommendations agreed to be implemented by MMS (NMFS Vessel Strike Avoidance Measures and the Marine Debris Awareness Program) reduced the likelihood of take such that an authorization was not believed to be required for sperm whales.**

Background:

NOAA did analyze the potential impacts oil spill in the biological opinion. We examined the potential effects of oil on each of those species and then considered MMS's "oil spill risk analysis" to determine the likelihood of a

Document ID: 0.7.19.1319.1

spill in the habitat of each species. In the "central planning area" [CPA], where Deepwater Horizon is located, we assumed "one or two large spills (>42,000 gal) [would] introduce an estimated 193,200-386,400 gal of oil as a result of proposed actions in the CPA.

In the rare event that a spill exceeding 420,000 gal should occur, it is estimated that approximately 630,000 gal of oil will be spilled over the 40-year lifetime of the proposed leases in the CPA." Ultimately we estimated a number of lethal and non-lethal turtle takes from spills across the area (not just in the CPA), 11 non-lethal sperm whale takes, and 2 lethal Gulf sturgeon takes - none of which rose to the jeopardy level.

Despite our assessment that these takes may occur, we did not authorize the takes because the discharge of oil is a prohibited action under the Clean Water Act. We said: "Therefore, even though this biological opinion has considered the effect on listed species by oils spills that may result from the proposed action, those takings that would result from an unlawful activity (i.e., oil spills) are not specified in this Incidental Take Statement and have no protective coverage under section 7(o)(2) of the ESA."

Document ID: 0.7.19.1319.1

Dispersants

How do dispersants work?

Answer:

- **Oil disperses naturally due to wind and wave action. We estimate that up to 10% of the oil in the Gulf has dispersed naturally and will continue to do so.**

- **Dispersants help break up more of the oil into tiny droplets which mix into the upper layer of the ocean.**
    a. Dispersed oil does not sink, rather it forms a "plume" or "cloud" of oil droplets just below the water surface. The dispersed oil remains within the upper layers of the ocean where it mixes vertically and horizontally into the water column and is rapidly diluted.
    b. Dispersed oil plumes move away from the site of the dispersant application as though on a conveyor belt or like smoke signals in the air with the direction of the currents.
        i. Most coastal currents flow parallel to the shore. Thus dispersed oil plumes will rarely come into the shallow nearshore waters.
    c. Concentrations of dispersed oil decline over time, eventually dropping below levels toxic to marine plankton or other drifting water column biota.
    d. Dispersed oil degrades much more rapidly than surface slicks as the dispersed oil droplets in a plume have a surface area thousands of times greater than the oil on the sea surface, allowing for a much faster natural bio-degradation than would be occurring in the untreated slick.

- **Decisions to use dispersants involve trade-offs between decreasing the risk to water surface and shoreline habitats while increasing the potential risk to organisms in the water column and on the seafloor.**

Background:

Document ID: 0.7.19.1319.1

- Today's dispersants are 10 to100 times less toxic than the oils we are dispersing
- Toxicity of dispersed oil is due mainly to the oil, not the dispersant
- Early life stages (eggs and larvae) of fish and shellfish are much more sensitive than juveniles or adults to dispersants and dispersed oil
- Depends on concentration and duration of exposure of organisms.
- Chemical composition of the dispersant is another factor.

Document ID: 0.7.19.1319.1

Are there any studies on short term and long term impacts of dispersants on fisheries, shrimp and oysters?

Answer:

- **Yes. Numerous studies have found current dispersants to be significantly less toxic than oil or dispersed oil in direct comparisons.**

- **However, the use of dispersants in this spill response presents unique challenges to NOAA due to the large scale of dispersant volume and the new environments (i.e. deepwater injection) in which they are being used. With such a high volume of dispersants being used on this spill, NOAA continues to examine the possible effects of these products on biological resources. While we have information regarding toxicity thresholds, NOAA is still looking to learn more about the fate and concentration of dispersants and dispersed oil in the water.**

- **Numerous studies have been conducted regarding the sensitivity of species to the toxicity of dispersants on a smaller scale. Sensitivity to dispersants and dispersed oil can vary significantly by species and life stage. Embryonic and larval stages appear to be more sensitive than adults to both dispersants and dispersed oil. Mature life stages of animals are more tolerant to exposures to oil-dispersant mixtures.**

- **Numerous studies on short-term exposure of fish to high concentrations of dispersant and dispersed oil have identified some delayed effects. These exposures are generally much greater than would be seen in the field. Few studies however have been conducted for shrimp and oysters.**

Document ID: 0.7.19.1319.1

What is the long-term impact of the dispersant on fisheries, shrimp and oyster communities?

Answer:

- **Given previous studies we would expect little or no long-term effect of dispersants or dispersed oil on adult fish or shellfish.**

- **However, the use of dispersants in this spill response presents unique challenges to NOAA due to the large scale of dispersant volume and the new environments (i.e. deepwater injection) in which they are being used. With such a high volume of dispersants being used on this spill, NOAA continues to examine the possible effects of these products on biological resources. While we have information regarding toxicity thresholds, NOAA is still looking to learn more about the fate and concentration of dispersants and dispersed oil in the water.**

- **We know that shellfish exposed to dispersed oil may become temporarily contaminated by the oil. Organisms may accumulate or filter oil droplets out of the water, thus contaminating their tissues. Once the exposure has ceased, the organism will begin to rid itself of the contaminants. This process may take several days to weeks.**

- **Dispersants can may be toxic to eggs and larvae trapped or entrained within the dispersed oil plume, causing some type of injury – effects could be acute and/or long-term (chronic).**

- **Most dispersed oil remains in the upper water column, so exposure to bottom dwelling organisms (shellfish, bottomfish) is typically low compared to those near the sea surface.**

- **If dispersant operations begin nearshore, the probability of exposure to dispersants and dispersed oil is much higher, but no dispersant operation in the world has shown mortality of adult fish or shellfish as a result.**

Background:

Document ID: 0.7.19.1319.1

- Acute impacts may include:
    - Mortality of eggs and larvae - Eggs and larvae are the most sensitive to dispersed oil concentrations. If encounter high enough concentrations, could be killed.

- Chronic impacts may include:
    - Short-term exposure of fish to high concentrations of dispersed oil may result in delayed impacts on the health of the animal. These may include liver abnormalities, impaired reproduction.

Document ID: 0.7.19.1319.1

What are the consequences of the Barrier Island/dredging proposal to the flow of oil and oceanographic patterns?

Answer:

- **The proposal is being reviewed by the Federal On Scene Coordinator regarding its feasibility and efficacy in responding to this incident. That said, a large scale project to construct lengthy berms or barriers and the amount of time required for construction do not make this a preferred alternative for spill response.**

BACKGROUND:

On May 11, 2010, the State of Louisiana Office of Coastal Protection and Restoration, requested emergency authorization from the US Army Corps of Engineers New Orleans District to discharge dredged material into waters of the United States for the construction of 15 berms along the barrier islands from east Grand Terre Island eastward to Sandy Point and along the Chandeleur Islands. Below is a list of NOAA preliminary comments and concerns:

ECOLOGICAL IMPACTS:
Borrow Impacts: Accelerated erosion of the barrier island chain may result from creating borrow pits in close proximity to the islands.
Water Quality: Inadequate circulation, caused by closing or reducing the cross-sectional area of passes leading into Chandeleur Sound and Barataria Bay, may lead to impaired water quality.
Impacts on MS Sound: The proposed project may have impacts on salinity in the Mississippi Sound. The State of Mississippi should be consulted prior to approval.
Long-Term Restoration: Depletion of finite Louisiana sand resources could affect future high-priority restoration projects, largely negating the planning efforts of the past two decades.

PHYSICAL IMPACTS AND EFFECTIVENESS:
Existing Pipelines: There are concerns about other pipelines in the dredging areas and the inability to precisely define where all of these pipelines are located so that they can be avoided. There is a very significant possibility that new pipelines would be ruptured during the dredging, creating additional environmental challenges
Correspondence with Spill Modeling: Plans to build natural barriers must be substantiated with spill modeling. Trapping of oil landward of the barriers that was

Document ID: 0.7.19.1319.1

introduced prior to or during construction is a risk.
Constructability: The proposed design section will be difficult to build in some reaches given the depths, currents, and sediment quality and availability.
Timing: Likelihood of completing construction in time prevent shoreward movement of oil is uncertain in general, and is particularly uncertain without use of borrow material from the shoreward side of the barrier islands.
Transport of Contaminated Sediment: The extent of the contamination of sediment to be mined is unknown. Further, once placed, oiled material could be returned to open water through regular erosion. Fate and disposition of contaminated sand eroded from protective berms and likely causes of erosion must be considered. Hurricanes or severe storms could also transport oiled sediments.

IMPACTS TO MARINE LIFE:
Sustainable Fishery Stocks: There are potential impacts to sustainable fishery stocks that could result from losses or impacts to sensitive life stages of harvestable species. Phased construction options should be considered to minimize impact on shrimp, oysters, sheephead, and red and black drum.
Forage Species: Forage species that support recreational and commercial fisheries could be adversely affected by impaired water quality and changes in hydrologic regimes caused by closing access between open waters and inshore waters.
Essential Fish Habitat (EFH): Impacts would occur primarily to benthic habitat, including unvegetated water bottom and seagrasses. The relative amounts of the type of habitats that would be affected are presently unknown.

NRDA CONSIDERATIONS:
Natural Resource Damage Assessment: The proposed action is unlikely to qualify as an emergency restoration action (that which allows restoration to be implanted without need to complete an injury assessment/restoration planning process) which would minimize the duration and extent of injury. Instead, this proposal may lead to increased environmental injury for which the Responsible Party would be responsible for compensating the public through the Natural Resource Damage Assessment Process.

Document ID: 0.7.19.1319.1

Fisheries Closure/Safe Seafood

What is NOAA's role in determining whether seafood is safe following an oil spill? What is FDA's role?

Answer:

NOAA:

- **NOAA has the authority to open and close harvest areas in Federal waters through authorities specific to oil spills in the Magnuson Stevens Act.**
- **NOAA Fisheries has expertise in collecting and analyzing seafood for safety and quality using both sensory analysis and chemical analysis to detect oil contamination in seafood. It can also provide training on sensory analysis to State and local representatives.**
- **The NOAA Fisheries labs have expertise and knowledge specific to collection and analysis of seafood samples. The National Seafood Inspection Laboratory in Pascagoula, MS can serve as a staging area for sample collection, preparation and storage in the Gulf region. The Northwest Fisheries Science Center has the expertise to conduct chemical analysis on seafood samples to detect the presence of hydrocarbons as well as longer term research on the effect of an oil spill on the seafood supply.**
- **The NOAA Seafood Inspection Program operates on a fee-for-service basis under authority in the Agricultural Marketing Act of 1946 to provide inspection services for fish, shellfish, and fishery products to the seafood industry.**
- **While, FDA sets food safety standards and makes the ultimate determination about food safety, FDA may request that NOAA inspect fish products and perform sample analysis for contaminants. NOAA is authorized to perform these services for FDA by a 2009 MOU between the two agencies.**

FDA:

- **Under the Food, Drug, and Cosmetic Act the FDA oversees the safety of U.S. food supply. With respect to seafood, FDA operates**

Document ID: 0.7.19.1319.1

a mandatory safety program for all commercial fish and fishery products.

- **The U.S. Food and Drug Administration regulates the presence of oil as an adulterant in seafood only after the product enters interstate commerce.**
- **The FDA provides guidance on potential hazards and controls for hazards in seafood. FDA does not have established tolerances for hydrocarbons in seafood. Any contaminated product is considered adulterated and cannot be sold.**
- **The FDA has no authority to prohibit harvesting or to close fishing zones.**

Document ID: 0.7.19.1319.1

NOAA is taking a precautionary approach to seafood with the surveillance and monitoring program but, it is also telling people the seafood is fit for human consumption. How do you reconcile that?

Answer:

- **It is not NOAA's role to ultimately determine whether seafood is safe. That determination lies with the FDA. However, NOAA does have seafood inspection experts qualified to make a determination about whether seafood meets established criteria and standards for safety and adulteration. NOAA Fisheries also has expertise in collecting and analyzing seafood for safety and quality using both sensory analysis and chemical analysis to detect oil contamination in seafood. It can also provide training on sensory analysis to State and local representatives.**

- **In general, FDA does not consider consuming seafood contaminated with oil or dispersant a safety concern. FDA is concerned about the possibility that seafood could become "adulterated" by oil or other chemical contaminants associated with oil or dispersants. Adulterated seafood may not be sold.**

- **"Adulteration" is a legal standard that only requires the presence of a substance that would not normally be expected to be present in the fish tissue. Therefore, adulterated seafood is considered unfit for human consumption. The term "adulterated does not necessarily mean that consuming the tissue poses a safety hazard from toxic effects from consumption of the contaminant.**

Document ID: 0.7.19.1319.1

What has NOAA Fisheries Service done to prevent harvesting from oil affected areas in the Gulf?

Answer:

- **NOAA Fisheries Service closed federal fisheries within the oil spill area. The current closure measures 24,241 sq mi (62,784 sq km), which is about 10% of the Gulf of Mexico EEZ.**

- **The fishery closure is based on the projected trajectory of the oil three days out from date of establishing the closure, and where the oil had been seen.**

- **The goal of closure is to encompass the entire area the spill has actually covered (based on a combination of satellite and overflight data) as well as the area the oil is projected to cover three days out.**

- **However, it is a dynamic situation and hard to predict the movement of the oil. The projected trajectory and where the actual oil is located, has changed faster than we could make regulatory adjustments to close fishing.**

- **Additionally, we do not understand where the oil maybe moving sub-ocean surface, and current closures do not take sub-surface oil into consideration.**

- **However, NOAA is also reviewing sampling of subsurface oil that is being conducted, including that of the R/V PELICAN. While the PELICAN scientists are still working up their data, initial plots have shown that their observations are mostly within the daily surface trajectory for oil hot spots. As well, the fishery closure boundaries give at least a 15 mile buffer offshore from their observations.**

- **NOAA Fisheries Service strongly advises fishermen not to fish in areas where oil or oil sheens (very thin layers of floating oil) are present, even if those areas are not currently closed to fishing.**

Document ID: 0.7.19.1319.1

How often are the fisheries closures modified?

Answer:

- **On a daily basis NOAA Fisheries Service reviews the trajectory data in the morning and communicates the decision regarding whether to change the closed area boundary (or maintain the current boundary) by 12 PM ET each day.**

- **Changes to the closed area boundary will be communicated via fishery bulletins, NOAA Weather Radio and by posting new maps and explanatory materials to the Southeast Regional Office website.**

- **Any changes to the closed area boundary take effect at 6 PM ET to provide fishermen adequate time to respond to the notification and plan the next day's activities.**

- **NOAA Fisheries will open closed areas that were closed based on an oil spill trajectory, if cumulative mapping of oil shows no oil was ever in the area.**

Document ID: 0.7.19.1319.1

What is NOAA's plan to assess the effect of the oil on Gulf seafood? How will the results from the surveillance and monitoring program be used?

Answer:

- **In response to the current oil spill, NOAA is working to determine the extent of contamination in seafood by collecting and evaluating seafood samples to assess the extent of any potential contamination both within the immediate area of the spill and throughout the Gulf.**

  - **The plan includes three important elements:**
    - **Evaluation of regions closed to fishing because of the presence of oil in the water but proposed for re-opening;**
    - **Broad scale monitoring finfish and shellfish populations in open and closed area to address the issue of fish migrations; and,**
    - **Market-based sampling to provide surveillance on the seafood supply.**

  - **NOAA is working with the U.S. Food and Drug Administration (FDA) to conduct a combination of both sensory analysis (of tissue) and chemical analysis (of water, sediment, and tissue) to determine if seafood is fit for human consumption in areas affected by the spill. The combination provides strong assurance that seafood is fit for human consumption.**

  - **The overarching goal of the program is to reassure the public about the safety of seafood by both validating NOAA's existing closures with data, allow for adjustments to the existing closed area, and ultimately to re-open all closed areas to harvesting.**

  - **The plan will also contribute to our understanding of the medium and long-term effects on fisheries stocks and protected species.**

Document ID: 0.7.19.1319.1

What are the criteria for re-opening fisheries? Have the re-opening methodology been used in previous spills? Has FDA approved this approach?

Answer:

- **The fishery will be reopened in areas affected by oil when it is determined that there is not a risk of food contamination or adulteration.**

- **There is a specific sequence of events which are routinely followed in order to maximize resources and promote efficiency. Each step should find no obvious signs of oil in order to proceed to the next analysis step.**

  Reopening sequence -
  1. No visible oil sheen observed on the water in the area to be opened;
  2. No oil found in water analysis;
  3. No oil found in sensory analysis;
  4. No oil found in chemical analysis (verification step for sensory analysis).

- **Yes, the methodology has been used to re-open fisheries following previous spills. In the past following oil spills, fisheries have generally been opened all at once or not at all. However, with the uncertainty about the duration and extent of this spill, NOAA is using a more flexible approach whereby we can adjust the boundaries of the closed areas based on the latest and best information about the movement of the oil and dispersants as well as make the ultimate decision to re-open the entire Gulf to harvesting once the oil is contained and eliminated.**

- **NOAA has coordinated with FDA on the re-opening criteria. The criteria are outlined in a document titled, "Protocol for interpretation and use of organoleptic and analytical results for re-opening oil-impacted areas closed to seafood harvesting."**

Document ID: 0.7.19.1319.1

Can NOAA consider re-opening areas before the oil spill is contained?

Answer:

- **Yes, NOAA can consider re-opening in areas that were closed but where oil was never present or if oil receded from an area and testing shows the seafood is fit for human consumption.**

- **NOAA Fisheries Service is continually monitoring the location of the oil to modify the closed areas.**

- **Once the oil spill is contained or the oil is no longer present in an area, cleanup is underway, and/or there are indications the cleanup is reducing the presence of visible oil, the acceptability of the seafood can be assessed. This assessment includes further sampling and comparison to the baseline established from previously collected samples.**

Document ID: 0.7.19.1319.1

While implementation of the National Ocean Policy and CMSP would not be able to prevent incidents such as the Deepwater Horizon oil Does the Secretary plan to declare a fishery disaster? Will that provide economic assistance for the fishermen of the affected states?

Answer:

- **The people and the coastal communities of the Gulf Coast are of critical economic importance to the United States. We understand that there continue to be economic impacts to the fishermen and the fishing industry.**

- **The Governor's of Louisiana and Mississippi have requested a disaster declaration under the Magnuson Stevens Act. We are working with the Governors of these states to evaluate the need to declare a fisheries disaster in order to facilitate federal aid to fishermen in these areas.**

- **There is no standing fund to allocate money for any disaster determinations that might be made. While it is difficult to totally assess and predict the total damage to fisheries at this point, we are evaluating the impacts and will work closely with the Governors and Congress to help the fishing industry impacted by this spill.**

Background:
The language in the **Administration's FY10 Supplemental Proposal** reads:
SEC. 7. (a) For an additional amount for "Operations, Research, and Facilities", National Oceanic and Atmospheric Administration, Department of Commerce, $15,000,000, to remain available until expended, for responding to economic impacts on fishermen and fishery-dependent businesses: Provided, That the amounts appropriated herein are not available unless the Secretary of Commerce determines, in consultation with the Secretary of Labor, the Administrator of the Small Business Administration, the National Incident Commander (40 CFR 300.323c), and the Director of the Office of Management and Budget, that resourced provided under existing authorities and appropriations, including by the responsible party under the Oil Pollution Act, 33 U.S.C. 2701, et seq., are not sufficient to respond to economic impacts on fishermen and fishery-

Document ID: 0.7.19.1319.1

dependent business following an incident related to a spill of national significance declared under the National Contingency Plan provided for under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9605): Provided further, That the National Marine Fisheries Service shall cause such amounts to be distributed among eligible recipients of assistance for fishery resource disaster and commercial fishery failures declared by the Secretary of Commerce under sections 308(b) and 308(d) of the Interjurisdictional Fishery Act (16 U.S.C. 4107) and sections 312(a) and 315 of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1681a(a) and 1864).

The language the Senate filed on Friday, May 14 reads:
For an additional amount, in addition to amounts provided elsewhere in this Act, for ''Operations, Research, and Facilities'', $13,000,000, to remain available until expended, for responding to economic impacts on fishermen

- *23 and fishery-dependent businesses: Provided, That the amounts appropriated herein are not available unless the Secretary of Commerce determines that resources provided under other authorities and appropriations including by the responsible parties under the Oil Pollution Act, 33U.S.C. 2701, et seq., are not sufficient to respond to economic impacts on fishermen and fishery-dependent business following an incident related to a spill of national significance declared under the National Contingency Plan provided for under section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9605).*

Document ID: 0.7.19.1319.1

Ocean Policy Task Force

I understand the President has received the recommendations from the Ocean Policy Task Force. What actions is the Administration planning to take in response to this report and how has the Deepwater spill play into that?

Answer:

- **The impacts from the Deepwater Horizon incident are very serious and far reaching. To date, this spill of national significance has had not only direct ecological impacts on Gulf of Mexico natural resources, but rippling effects on maritime commerce, regional fisheries, recreation, and human health.**

- **It demonstrates just how much we as humans rely on healthy and resilient ocean and coastal ecosystems in our daily lives. This inextricable relationship is a fundamental principle of the National Ocean Policy proposed by the Interagency Ocean Policy Task Force.**

- **The Policy and the Interim Framework for Coastal and Marine Spatial Planning each outline how the Nation will change the way it does business to account for this important connection to ensure the sustainability of ocean, coastal and Great Lakes resources for the benefit of this and future generations.**

- **While implementation of the National Ocean Policy and CMSP would not prevent similar disasters in the future, it would however help us as a Nation think comprehensively about our ocean, coastal and Great Lakes resources – their value and the services they provide, the trade-offs that are made in how we use them, and how we need to manage them for this and future generations.**

Background

Document ID: 0.7.19.1319.1

CMSP is one of the 9 priority objectives outlined in the National Ocean Policy. It is defined as a comprehensive, adaptive, integrated, ecosystem-based, and transparent spatial planning process, based on sound science, for analyzing current and anticipated uses of ocean, coastal, and Great Lakes areas. CMSP identifies areas most suitable for various types or classes of activities in order to reduce conflicts among uses, reduce environmental impacts, facilitate compatible uses, and preserve critical ecosystem services to meet economic, environmental, security, and social objectives.

The response to any oil spill event is only as good as the planning, thought and assessment that has occurred beforehand. Spatially explicit environmental and socioeconomic data and models used in developing and executing contingency plans illustrates the underlying principle of CMSP; that scientifically informed pre-planning pays off – in this case, in response efficiency and protection of sensitive resources. The CMSP Framework would bring all interests to the table to make decisions together using the best available scientific information. Under the CMSP Framework proposed by the Ocean Policy Task Force, regional CMS Plans would:

- Be prepared ahead of time and enhance current contingency plans with a national information system and derived data products;
- Take into account the risks posed by all ocean uses, including energy development, as we think about how and where to pursue these activities in the future; and,
- Complement and inform the implementation of a comprehensive national energy policy.

Document ID: 0.7.19.1319.1

How would the Ocean Policy Task Force's recommended National Ocean Policy and Framework for Coastal and Marine Spatial Planning help in this situation?

Answer:

- **The National Ocean Policy and the Interim Framework for Coastal and Marine Spatial Planning (CMSP) each outline how the United States federal government will change the way we do business to account for the important connection between humans and healthy and resilient ocean and coastal ecosystems and to ensure the sustainability of ocean, coastal and Great Lakes resources.**

- **The response to any oil spill event is only as good as the planning, thought and assessment that has occurred beforehand. Spatially explicit environmental and socioeconomic data and models used in developing and executing contingency plans illustrates the underlying principle of CMSP; that scientifically informed pre-planning pays off – in this case, in response efficiency and protection of sensitive resources. Under the CMSP Framework proposed by the Ocean Policy Task Force, regional CMS Plans would:**
    - **Be prepared ahead of time and enhance current contingency plans with a national information system and derived data products;**
    - **Take into account the risks posed by all ocean uses, including energy development, as we think about how and where to pursue these activities in the future; and,**
    - **Complement and inform the implementation of a comprehensive national energy policy.**

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Currents and Weather Concerns

Why hasn't more oil hit the shoreline?

Answer:

- **NOAA uses specialized computer models to predict the movement of spilled oil on the water surface. We predict where the oil is most likely to go and how soon it may arrive there. For the Deepwater Horizon spill, NOAA has produced two trajectory predictions per day.**

- **Oil on the water is moved by currents and winds. In the first couple weeks after the spill, ocean currents and prevailing winds inhibited oil from moving towards the shore. Over the past week, the wind has changed and been more consistent out of the SE, and this has begun to push oil towards the shore.**

- **The currents are very complex in that area and eddies can influence oil movement.**

- **The effect of the wind on the oil is reduced when the oil is emulsified. This means that the wind will not move the oil as efficiently, so the southerly winds have less influence.**

- **Freshwater flowing from the Delta forms a convergence zone as it rides up over the sea water. The convergence zone collects oil and makes it necessary for the wind effect to be strong enough to "break through" the convergence effect to get the oil on shore.**

- **It's possible that the oil may sink before it comes to shore due to lower density of freshwater on the surface and/or the oil picking up sediment and becoming denser.**

Document ID: 0.7.19.1319.1

What happens if the oil moves into the loop current? Is the Atlantic Coast in danger? What can we expect if that occurs?

Answer:

- **NOAA is tracking this closely to determine whether any oil reaches the loop current. The location of both the oil slick and loop current are very dynamic and constantly changing.**

- **The distance between the surface oil slick and the surface expression of the Loop Current has decreased from nearly 50 miles a week ago to 10 miles yesterday as the slick expands to the south and the Loop Current extends to the north.**

- **If oil enters the loop current, the oil might reach the Florida Straits as quickly as 8 to 10 days. During this time, evaporation and dispersion would reduce the oil volume by 30 to 50 percent. The remaining oil would be composed of emulsified streamers and/or tar balls.**

Background:

- The Loop Current is an area of warm water that comes up from the Caribbean, flowing past the Yucatan Peninsula and into the Gulf of Mexico. From there, it generally curves east across the Gulf and joins the Florida Current as it moves through the Florida Straits, where it finally joins the Gulf Stream as it travels up the Atlantic Coast.

- Both the location of the Loop Current and location of the oil slick are dynamic and constantly changing.

- What's being done to monitor the loop current
  - *Satellite data*. We look at sea surface height and sea surface temperature images of satellites to see the Loop Current location. This is a general picture because the satellites have to average data over a few days to get a complete picture.
  - *Model data*. We are looking at a number of different models (the same ones we're using to do the uncertainty in the daily forecasts), we are looking at the currents in those and where the loop current is.

Document ID: 0.7.19.1319.1

- *Observation data.* Collected from the boat Horizon Marine that is transiting between the slick and the Loop Current.Buoy Drops. BP (via Horizon Marine) and USCG have both dropped buoys, we look at how those are moving each day. The NOAA P3 will also drop sensors to add to information about vertical temperature profile.

Document ID: 0.7.19.1319.1

I am deeply concerned for the upcoming hurricane season. How will the oil slick interact with a hurricane?

Answer:

- **We do not yet understand the properties of the oil, and we do not yet know what the interaction will be with a hurricane.**

- **However, there are many hypotheses that NOAA hurricane forecasters and researchers believe the interactions could be, but research and modeling will need to be done to test these assumptions. NOAA Research (Hurricane Research Division) is planning to make observations and run simulations to test these hypotheses so that we can incorporate them into future hurricane forecasts.**

- **Some of the hypotheses that need to be tested:**

    - **Will the oil slick help or hurt a storm from developing in the Gulf?**

      Evaporation from the sea surface fuels tropical storms and hurricanes. Over calm water, an oil slick can suppress evaporation if the layer is thick enough by not allowing contact of the water to the air. With less evaporation one might assume there would be less moisture available to fuel the hurricane and thus reduce its strength.

      However, at high wind speeds, such as those found in tropical storms and hurricanes, a thin layer of oil such as is the case with the current slick (except in very limited areas near the well) would likely break into pools on the surface or mix as drops in the upper layers of the ocean, allowing much of the water to remain in touch the overlying air and greatly reduce any effect on evaporation. When that happens, the oil slick is not likely to have a significant impact on the hurricane.

Document ID: 0.7.19.1319.1

- **What will happen to a hurricane that runs through this oil slick?**

  If the slick remains small in comparison to a typical hurricane's general environment and size, as is the case as of May 7, the anticipated impact on the hurricane would be minimal.

  The oil is not expected to appreciably affect either the intensity or the track of a fully developed tropical storm or hurricane.

  The oil slick would have little effect on the storm surge or near-shore wave heights.

- **What will the hurricane do to the oil slick?**

  The high winds and seas will mix and "weather" the oil which helps accelerate the biodegradation process. The high winds may distribute oil over a wide area but it is difficult to model exactly where the oil may be transported. Storms' surges may carry oil inland mixed with hurricane debris. Movement of oil in a hurricane would depend greatly on the track of the hurricane. A hurricane passing to the west of the oil slick could drive a large volume of oil to the coast.

Document ID: 0.7.19.1319.1

Flow Rate

Do you think the current estimate of a 5,000 barrel release from the well site is technically defensible, and if not what would you suggest as an approach to refine such estimates?

Answer:

- **The working assumption of 5,000 barrels per day is not based on definitive or defensible science.**

- **A precise estimate of the release rate is an urgent need because we are trying to adapt our mitigation and resource sampling requirements to respond to a spill of a certain dimension.**

- **The most robust methods to precisely estimate the flow rate, in NOAA's judgment, are concurrent measurements from an imaging multibeam sonar and a profiling doppler velocity log. These instruments need to be deployed next to the leak to get precise measurements of the flow rate.**

- **Also, several samples are necessary because it is apparent that there are intermittent gas and oil flows from the well and thus the rate of release is variable. I understand that our priority is to "kill the well" but some modest investment of ROV time in estimating the rate of flow will considerably increase our situational awareness and ability to respond to the spill.**

Document ID: 0.7.19.1319.1

What can we do to prevent this from happening again?

Answer:

- **There will continue to be a risk of oils spills as long as our economy is based on the consumption of fossil fuels.**

- **However, we can continue to be vigilant and strengthen our nation's ability to prevent, respond to, and restore the damage caused by oil spills.**

- **To mitigate environmental effects of future spills, responders must be equipped with sufficient capacity and capabilities to address the challenge.**

- **NOAA is working with the Administration to identify additional legislative authorities, research and development and response capbilities needed to help better address future spills.**

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Received(Date): Thu, 20 May 2010 23:19:24 -0400
From: Christopher.Meaney@noaa.gov
Subject: state of play
To: John.Rapp@noaa.gov
Cc: Christopher.Meaney@noaa.gov
State_of_play.docx

John, Attached is the state of play. I'll also paste below but the formatting will likely get messed up. Quick notes on the morning:
1) tomorrow is bike to work day, so I may not be in the office until 7:45/7:50 (need to get my free T shirt at freedom plaza)
2) in case you get in before me an want your computer, it is in my deskdraw. When you are looking at my desk, it is in the in the bottom draw of the gray filing thing to the left. The charger is upstairs in the War Room, I got tired of carrying it. 3)if the pco room is locked when you get there, there is a key above the door. 4) we spent some time brainstorming on how to improve how the DWH staff is used and how to remedy some of the problems the group has observed. BEth/Jainey and I will fill you in tomorrow. I plan to come to the 8:00

Turtle/Dolphin Stranding Mortality Table
· Will be sent to you and DWH staff nightly so that it can be in Leadership's book.
· Q and A from Brian requires a quick review and then clearance by NMFSleadership.
Seafood Safety
· Map depicting NOAA seafood/water sampling areas was tasked out, however the response this evening was that NMFS is behind schedule. Beth L indicated that it may be Thursday evening or Friday morning when we see a cleared copy. Note that at the DOC/NOAA tag up at 5 pm I mentioned this map to DOC, as they mentioned that the New York Times may be interested in doing a story on sampling locations. Nothing to push be aware that DOC may want it fast. · Seafood Safety Sampling Protocol Part 2 (also referred to as the workplan/surveillance plan). This is still being worked on by NMFS. I believe there is confusion at NMFS (Jenni/Lauren) as to what has been seen by NMFS leadership. Sounds like there are two taskers out there,the 2nd protocol and the response to DOC's "metrics" question from earlier in the week. Basically the bottom line is that neither are completed or cleared. ·The updated seafood safety factsheet was sent to leadership the afternoon of 5/20 for clearance. Changes are necessary per Spring and Sarri. The changes need to be sent back to NMFS (I will assist in the morning). · Tasker asking for an answer on chemical analysis of necropsies was sent 5/20 to Jenni. The response requires clarification and I will sendthat in the morning. · There were 2 interagency calls with OMB, FDA, and NOAA while you were gone. The BIG thing coming down the pike on Friday and the weekend is that EPA baseline data take from fish pre DWH on the chemical "BaP" suggests that the standard in the FDA/NOAA reopening protocol may already exceed safety limits. Another way of saying this is that what is out there in the gulf may exceed the reopening criteria already and this could make reopening closures difficult. EPA is reviewing their data. DOC WILL want an update on this at the 5pm. Monica is aware as is Kris.Closure
· International question was answered by GC and shared with leadership. This should be in your cleared folder. · Boundaries were not changed while you were gone. · A major extension of a closure is not likely for Friday.
Dispersants · NMFS/ DOC/NOAA planned to have a check in but I do not think it happened. · Lois is working backchannels to get the chemical makeup. · DOC always interested in any news.
Disaster
· Lots of email traffic on this last night…not sure what is planned.· Garret Graves from

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State of play (while you were away)

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Document ID: 0.7.19.981.1

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Received(Date): Fri, 21 May 2010 14:41:54 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Science Summit info
To: Margaret Spring <Margaret.Spring@noaa.gov>,Justin kenney <Justin.kenney@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

See below from Gabrielle:

The Science Summit will provide an opportunity for representatives of the agencies involved in the Federal response to present the work and science that is being conducted, including legal framework. The Summit will include breakout groups to solicit ideas on how to address the following high priority research questions related to the DWH oil spill:
1) What is the magnitude of the spill? Are there additional mechanisms needed to measure the spill?
2) What is the fate and transport of the oil in space and time (e.g., loop current, sub-surface oil)?
3) What are the ecosystem and seafood safety impacts? How do we set the stage for a holistic, ecosystem-based approach to understanding the short and long-term effects of the spill on both natural and human systems?

This Summit will also include a special, targeted session on the issues related to the use of dispersants and considerations of the ecological impacts due to the broad use of dispersants.

At the request of NOAA, NSF, EPA, USGS, USFWS, and other federal agencies involved in the DWH spill response, the Consortium for Ocean Leadership (COL) will be asked to host and facilitate this Summit as an independent effort to bring together representatives of the external research community to provide recommendations to the federal science agencies regarding research, observations, modeling, and monitoring responses to the DWH spill. The intent would be for the COL to work with the University of New Hampshire's Coastal Response Research Center (UNH CRRC) for facilitation services.

Logistics:
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Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Fri, 21 May 2010 15:24:07 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: RE: Pre-brief at 9:05 on Saturday
To: Linda belton <Linda.Belton@noaa.gov>,"dwh.staff@noaa.gov" <dwh.staff@noaa.gov>, 'John Gray' <John.Gray@noaa.gov>,"David.Kennedy@noaa.gov" <David.Kennedy@noaa.gov>,"Dave.Westerholm@noaa.gov" <Dave.Westerholm@noaa.gov>,'Monica Medina' <Monica.Medina@noaa.gov>,'Margaret Spring' <Margaret.Spring@noaa.gov>
Cc: "'Jacqueline J. Rousseau'" <Jacqueline.J.Rousseau@noaa.gov>,"Jen.Pizza@noaa.gov" <Jen.Pizza@noaa.gov>,'John Oliver' <John.Oliver@noaa.gov>,"Adele.Stevens@noaa.gov" <Adele.Stevens@noaa.gov>

Yes – I am on as of Monday again.

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

From: Linda belton [mailto:Linda.Belton@noaa.gov]
Sent: Friday, May 21, 2010 3:22 PM
To: dwh.staff@noaa.gov; 'John Gray'; David.Kennedy@noaa.gov; Dave.Westerholm@noaa.gov; 'Monica Medina'; 'Margaret Spring'
Cc: 'Jacqueline J. Rousseau'; Jen.Pizza@noaa.gov; 'John Oliver'; Adele.Stevens@noaa.gov
Subject: FW: Pre-brief at 9:05 on Saturday

· Beth, John Gray will do the Governor's calls on Saturday and Sunday; with David Kennedy.

· I believe Monica will be back on Monday. Monica please let me know if this is not correct.

· You will notice that fishery closure and wildlife impacts report have been removed from the agenda; we do not have to report on this unless there is a significant change or request.

From: McGrath, Shaun L. [mailto:Shaun_L._McGrath@who.eop.gov]
Sent: Friday, May 21, 2010 12:27 PM
To: McGrath, Shaun L.; Belton, Linda; Monica Medina; heather.smith1@dhs.gov; Tennyson, Stephanie L; Pallone.Sarah@epamail.epa.gov; Lori_Faeth; Kayyem, Juliette; Murk, David CDR
Subject: Pre-brief at 9:05 on Saturday

All,

Draft agenda for the call tomorrow is below. Please let me know if there are any changes.

Saturday, May 22 Call with Governors

9:05 a.m. pre-brief; 9:15 Governors

[redacted] b6

[redacted] b6 – **Speakers**

[Guest Pin: [redacted] b6

Please limit participation in the pre-conference to speakers and essential staff.

DRAFT AGENDA

-

· Opening remarks (Valerie Jarrett)

· Observations and Trajectory – **John Gray and David Kennedy, NOAA**

o NOAA will provide the latest observations and trajectories

o Loop Current

o David Westerholm mentioned that the crab traps were neg on subsurface oil. We need a report out on the findings from all of the crab trap tests.

o Jindal asked about how far we can expect the oil to move West.

· Situation and Leak Stabilization Update – **RADM Peter Neffenger, NIC**

o Latest information from National Incident Command, including current status of efforts to stabilize the leaks.

o Neffenger – top kill commences on May 25; will take 2-3 days

o Neffenger – have established a team to determine the flow rate. Will be an independent, peer-reviewed study to determine actual daily flow, plume movement, total volume, and total reservoir capacity. We will let Govs know as soon as we have the findings.

o Jindal – what is flow out of insertion tube – 2200 or 5000 barrels per day

o Jindal – Urged decision on the barrier proposal. Mentioned that he will talk to Adm Allen at 10:00 today (NOTE: that is the wrong time)

· Operations Report – **RADM Mary Landry, UAC**

o Response Plans and Boom

o Landry – we will keep Gov apprised of the impacts he can expect (when, where and type of oil) based on our trajectories

o Landry – we put pressure on BP to increase the focus on Terrebonne. We will see today whether BP follows.

o Landry – hopefully we will see today whether we are successful in mitigating the oil's movement into the marshes

o Landry – employing more fisherman. Said Gov would hopefully see that today on his flight. Said to let us know if not seeing it.

o Jindal – thanks for talking to BP. We need more boom and also someone there to release the boom already stockpiled

· EPA Update – **EPA Dep Admin Bob Perciasepe**

o Jindal – are we changing subsea dispersant?

· Open discussion and Q&A with Governors and state officials

- Next call – 9:15 a.m. EDT (8:15 CDT) Sunday, May 23, 2010

-

Received(Date): Fri, 21 May 2010 15:46:56 -0400
From: Nancy Wallace <Nancy.Wallace@noaa.gov>
Subject: Re: Science Summit info
To: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Cc: "'Beth.Dieveney@noaa.gov'" <Beth.Dieveney@noaa.gov>,"'Margaret.Spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'Justin.kenney@noaa.gov'" <Justin.kenney@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Gabby,
The Sea Grant Community outreach meetings are also being planned for the first week of June. Andrea and Andy are involved in those. I think the audiences will be different, but for situational awareness wanted to alert everyone to multiple meetings with NOAA involvement the same week. Also the SES summit, so the sooner we can determine who should be where the better.

-Nancy

Gabrielle Dreyfus wrote:
> Looks like we've got an extra week. Now looking at first week of June following discussion btw JL and Napolit.
>
>
> ----- Original Message -----
> From: Beth Dieveney <Beth.Dieveney@noaa.gov>
> To: Margaret Spring <Margaret.Spring@noaa.gov>; Justin kenney <Justin.kenney@noaa.gov>
> Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
> Sent: Fri May 21 14:41:54 2010
> Subject: Science Summit info
>
> See below from Gabrielle:
>
> The Science Summit will provide an opportunity for representatives of
> the agencies involved in the Federal response to present the work and
> science that is being conducted, including legal framework. The Summit
> will include breakout groups to solicit ideas on how to address the
> following high priority research questions related to the DWH oil spill:
> 1) What is the magnitude of the spill? Are there additional mechanisms
> needed to measure the spill?
> 2) What is the fate and transport of the oil in space and time (e.g.,
> loop current, sub-surface oil)?
> 3) What are the ecosystem and seafood safety impacts? How do we set the
> stage for a holistic, ecosystem-based approach to understanding the
> short and long-term effects of the spill on both natural and human systems?
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>
>

--
Nancy Wallace
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5224
Washington, DC 20230

phone: 202-482-0292
cell: 202-684-5086

Received(Date): Fri, 21 May 2010 16:41:48 -0400
From: Jamon Bollock <Jamon.Bollock@noaa.gov>
Subject: Re: phone #
To: John Rapp <John.Rapp@noaa.gov>
jamon_bollock.vcf

301-713-7392

John Rapp wrote:
> Jamon,
>
> Lois told me I should talk to you about the dispersant formula. Can I
> call you? What's your #?
>
> Thanks,
> John

Jamon Bollock

Attorney-Advisor

National Oceanic & Atmospheric Administration
Office of General Counsel

SSMC4, Suite 6111
1305 East-West Highway
Silver Spring, Maryland 20910
USA

(301) 713-7392 (Work)
(301) 713-4408 (Fax)

jamon.bollock@noaa.gov (Internet)

http://www.gc.noaa.gov/ocean-office.html

Formatted Name
Jamon Bollock

Name

Family:	Bollock
First:	Jamon
Middle:	
Prefix:	
Suffix:	

Organization
National Oceanic & Atmospheric Administration
Office of General Counsel

Address

P.O. Address:	SSMC4, Suite 6111
Extended Address:	
Street:	1305 East-West Highway
Locality:	Silver Spring
Region:	Maryland
Postal Code:	20910
Country:	USA

Electronic Mail Address (Internet)
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(301) 713-7392

Telephone Number (Fax)

(301) 713-4408

Uniform Resource Locator

http://www.gc.noaa.gov/ocean-office.html

Version

2.1

Received(Date): Mon, 24 May 2010 11:03:17 -0400
From: "Gilson, Shannon" <SGilson@doc.gov>
Subject: RE: Q and a re whether rec is covered?
To: "Spring, Margaret" <Margaret.Spring@noaa.gov>,"Denit, Kelly" <Kelly.Denit@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>
Cc: "Kenney, Justin" <Justin.kenney@noaa.gov>,"'krissarri@gmail.com'" <krissarri@gmail.com>

What is the answer to Justin's point on NOAA's concerns re impact of dispersants on seafood?

-----Original Message-----
From: Margaret Spring [mailto:margaret.spring@noaa.gov]
Sent: Monday, May 24, 2010 11:01 AM
To: Denit, Kelly; Rapp, John
Cc: Kenney, Justin; 'krissarri@gmail.com'; Gilson, Shannon
Subject: Q and a re whether rec is covered?

I think the team needs a q and a if we are asked about rec businesses being covered.

Probably the best thing is to say 312 is the basis for a 315 declaration under MSA, and we will be working with the governors and congress on that.

Sound good?

Received(Date): Tue, 25 May 2010 15:59:04 -0400
From: Steven.Gallagher@noaa.gov
Subject: Re: Seafood Surveillance/Sampling Plan and Funding
To: John Rapp <John.Rapp@noaa.gov>
Cc: Gary.Reisner@noaa.gov
Seafood_Surveillance_Plan_Overview_and_Budget_plan5-24-10.doc

John,

Gary Reisner was the lead on this and can answer your questions. The plan is attached.

Steve

----- Original Message -----
From: John Rapp <John.Rapp@noaa.gov>
Date: Tuesday, May 25, 2010 3:12 pm
Subject: Re: Seafood Surveillance/Sampling Plan and Funding
To: Steven.Gallagher@noaa.gov
Cc: "Sarri, Kristen" <KSarri@doc.gov>, "Medina, Monica" <Monica.Medina@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>, "Oliver, John" <John.Oliver@noaa.gov>, "Kennedy, David" <David.Kennedy@noaa.gov>, "Schwaab, Eric" <Eric.Schwaab@noaa.gov>, "Wilson, Steven" <Steven.Wilson@noaa.gov>, "Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>

> Steve,
>
> Are all components of the original plan - re-opening protocol,
> surveillance, dockside, and long-line sampling - still included in the
>
> initial segment of funding or did we have to cut something?
>
> Thanks,
> John
>
> Steven.Gallagher@noaa.gov wrote:
> > Kris,
> >
> > We have moved from 90 days to 30 days? Correct, we heard back from
> Coast Guard yesterday that the OSLTF emergency fund expenditures are
> at $81M and growing against a cap of $100M. USCG is taking steps to
> limit spending authority until Congress approves transfer of $100M.
> As a result, the plan is to approve NOAA sampling work in 30 day
> increments versus longer term requested.
> >
> >
> > How does that impact the 6-months and 9-months sampling?
> >
> > At this point, it does not impact other than administrative burden
> to get individual approvals.
> >
> > Are we assured of funding for 60-days after the initial 30?
> >
> > Yes.
> >
> > How does the tightness of OSLTF emergency funds impact other NOAA request?
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> > We are moving forward with a 3rd PRFA agreement of $4M for cover
> NOAA activities. It is unclear at this time if the tightness will
> impact this request.

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> > As I indicated, we will report back if further pressure is needed.
>
> >
> > Steve
> >
> >
> >
> > ----- Original Message -----
> > From: "Sarri, Kristen" <KSarri@doc.gov>
> > Date: Tuesday, May 25, 2010 10:11 am
> > Subject: RE: Seafood Surveillance/Sampling Plan and Funding
> > To: "Gallagher, Steven" <Steven.Gallagher@noaa.gov>
> > Cc: "Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John"
> <John.Rapp@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>,
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> >> Thanks, Kris
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> >> _____
> >> From: Steven.Gallagher [
> >> Sent: Tuesday, May 25, 2010 10:01 AM
> >> To: Sarri, Kristen
> >> Cc: Medina, Monica; Rapp, John; Reisner, Gary; Oliver, John;
> Kennedy,
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> >> Subject: Re: Seafood Surveillance/Sampling Plan and Funding
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> >> Kris,
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> >> and they have asked for a 30 day plan with the intent to extend.
> >>
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> > Return-path: <Steven.Gallagher@noaa.gov>
> > Received: from vmail6.nems.noaa.gov ([140.90.121.176])
> > by mail.nos.noaa.gov (Sun Java System Messaging Server 6.2-7.05
> (built Sep 5
> > 2006)) with ESMTP id <0L2Z00L0BNY3TI70@mail.nos.noaa.gov>; Tue,
> > 25 May 2010 14:42:03 -0400 (EDT)
> > Received: from noaa.gov ([127.0.0.1])
> > by vmail6.nems.noaa.gov (Sun Java System Messaging Server 6.2-7.05
> (built Sep
> > 5 2006)) with ESMTP id <0L2Z004PINY34M80@vmail6.nems.noaa.gov>; Tue,
> > 25 May 2010 14:42:03 -0400 (EDT)
> > Received: from [173.79.121.247] by vmail6.nems.noaa.gov (mshttpd); Tue,
> > 25 May 2010 14:42:03 -0400
> > Date: Tue, 25 May 2010 14:42:03 -0400
> > From: Steven.Gallagher@noaa.gov
> > Subject: Re: RE: Seafood Surveillance/Sampling Plan and Funding
> > In-reply-to: <0FCF0CAD622EDA42B4C1D445867A179A9FAC387144@EMAIL1.email.doc.gov>
> > To: "Sarri, Kristen" <KSarri@doc.gov>
> > Cc: "Medina, Monica" <Monica.Medina@noaa.gov>,
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> > "Wilson, Steven" <Steven.Wilson@noaa.gov>,
> > "Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>
> > Message-id: <dc2037ec34c8ee85.4bfbe1bb@noaa.gov>
> > MIME-version: 1.0
> > X-Mailer: Sun Java(tm) System Messenger Express 6.2-7.05 (built Sep
> 5 2006)

> > Content-type: text/plain; charset=us-ascii
> > Content-language: en
> > Content-transfer-encoding: 7bit
> > Content-disposition: inline
> > X-Accept-Language: en
> > Priority: normal
> > References: <0FCF0CAD622EDA42B4C1D445867A179A9FAC3870DA@EMAIL1.email.doc.gov>
> > <4BFBD7FF.4070804@noaa.gov>
> > <0FCF0CAD622EDA42B4C1D445867A179A9FAC387144@EMAIL1.email.doc.gov>
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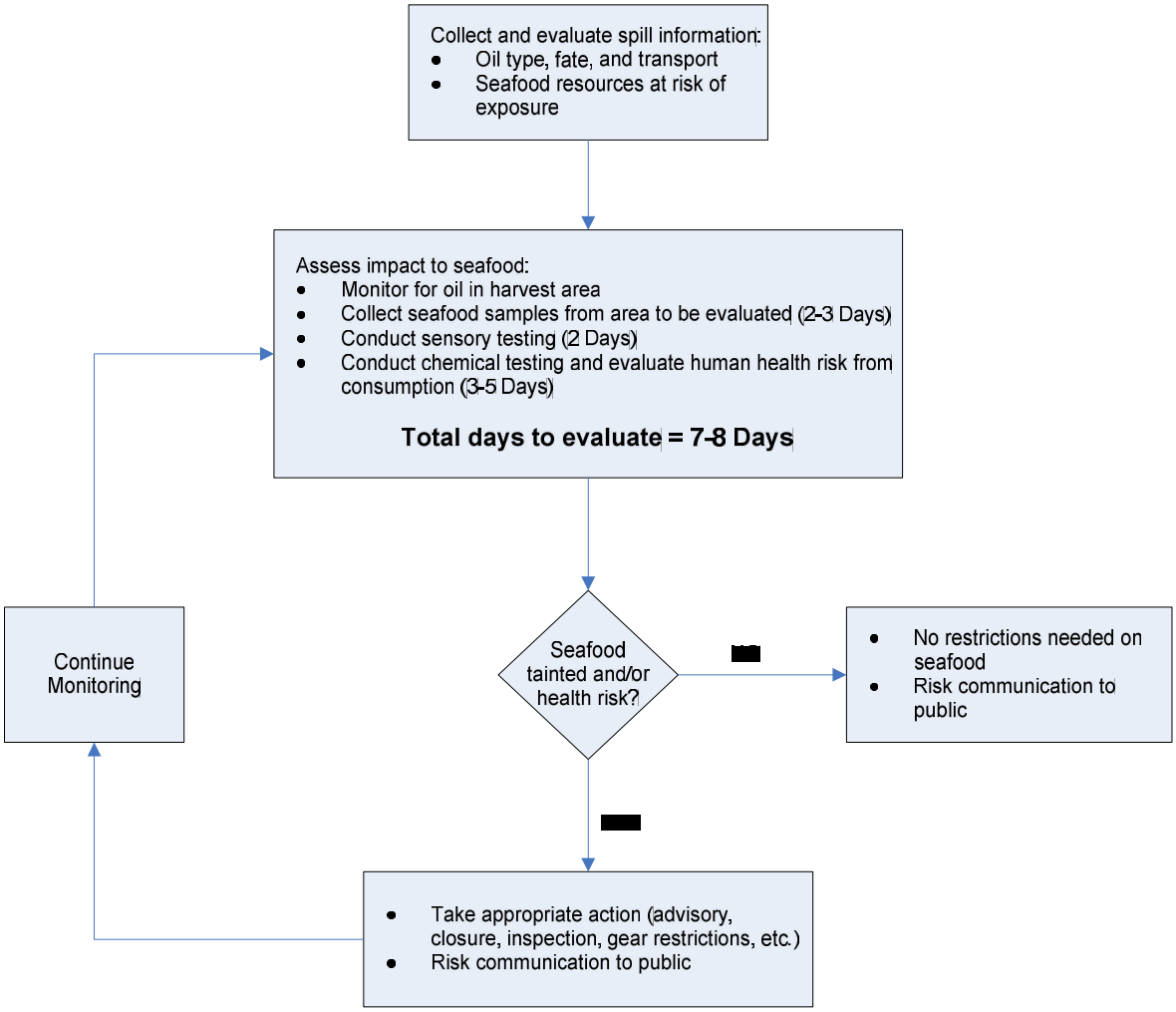
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NOAA Fisheries Seafood Surveillance and Action Plan of Work

May 12, 2010

Plan Overview

The focus of this seafood safety surveillance plan is to provide layers of protection to assure that potentially tainted seafood does not enter the marketplace. Fishery closures have been initiated with the goal of closing areas where oil has been observed. This model assumes that there is a possibility that in those areas there has been uptake in finfish, shrimp, and other shellfish species. Openings of parts or all of the areas currently closed will only occur if the results of the sensory and chemical analyses indicate that seafood species meet the developed criteria for safe and wholesome seafood. Initial openings will likely be of areas where subsequent observations suggest where oil sheen or surface oil in fact had not occurred. Second, openings will be considered for areas where surface oil had occurred but is no longer present.



The initial focus on openings and closings will assure that areas observed to contain surface oil (the highest probability of containing tainted seafood) have the highest rate of sampling. As part of this

strategy, at sea sampling will include taking samples in "buffer areas" within a 5 nautical mile zone surrounding the area contemplated for re-openings.

The second layer of protection will be broad scale monitoring at sea of the seafood supply that may be impacted by the oil spill. There is some concern that migratory species will become tainted but then move to areas that are nominally open. In order to monitor for this effect, broad scale surveys obtaining seafood samples from upstream and downstream open areas will be obtained. This will provide information for areas where sub-surface oil or dispersants occur but surface oil may not indicate closures are appropriate. These broad scale surveys will occur on chartered fishing vessels and research vessels, as appropriate.

Third, this plan will also provide surveillance of the general seafood supply entering commerce. In particular, market samples of large pelagic species (e.g., yellowfin tuna) and other species will provide additional protection to assure that the seafood supply from the Gulf remains healthy and wholesome.

When the information indicates a fishery may be opened the *Protocol for Interpretation and Use of Organoleptic and Analytical Chemistry Results for Re-Opening Oil-Impacted Areas Closed to Seafood Harvesting* is used to determine whether an area can be opened. This protocol has been tested and proven reliable in past spills and has received concurrence from FDA.

This plan covers activities to make such a determination through coordination by these NOAA Fisheries Offices:

- Seafood Inspection Program (SIP)
- Northwest Fisheries Science Center (NWFSC)
- National Seafood Inspection Laboratory (NSIL)
- Southeast Fisheries Science Center (SEFCS)
- Southeast Regional Office (SERO)

Description of Activities and Budget Estimate by Activity

Activity	Cost (30-days)*	Cost (3 months)	Cost (6 months)	Cost (9 months)
Sample Collection	2,226,850	$2,485,090	$3,278,230	$4,071,370
Evaluation for Buffer Zones and Surveillance	2,178,444	$3,485,667	$5,230,134	$6,974,601
Protocol for Re-opening	213,733	$641,200	$1,282,400	$1,923,600
TOTAL	**4,619,027**	$6,611,957	$9,790,764	$12,969,571

Sample Collection

Under this plan, NOAA will design a sample collection protocol for monitoring of fish and shellfish in areas expected to be impacted by the spill. The sample collection will involve trawling, longline,

plankton, and water sampling in defined fishing areas. Sampling may be species specific and must be collected in a specific manner to facilitate analysis once collected. NOAA will charter vessels in addition to utilizing available NOAA vessels. It will also purchase gear such as electronic data collection equipment to conduct the surveys necessary to make collection decisions.

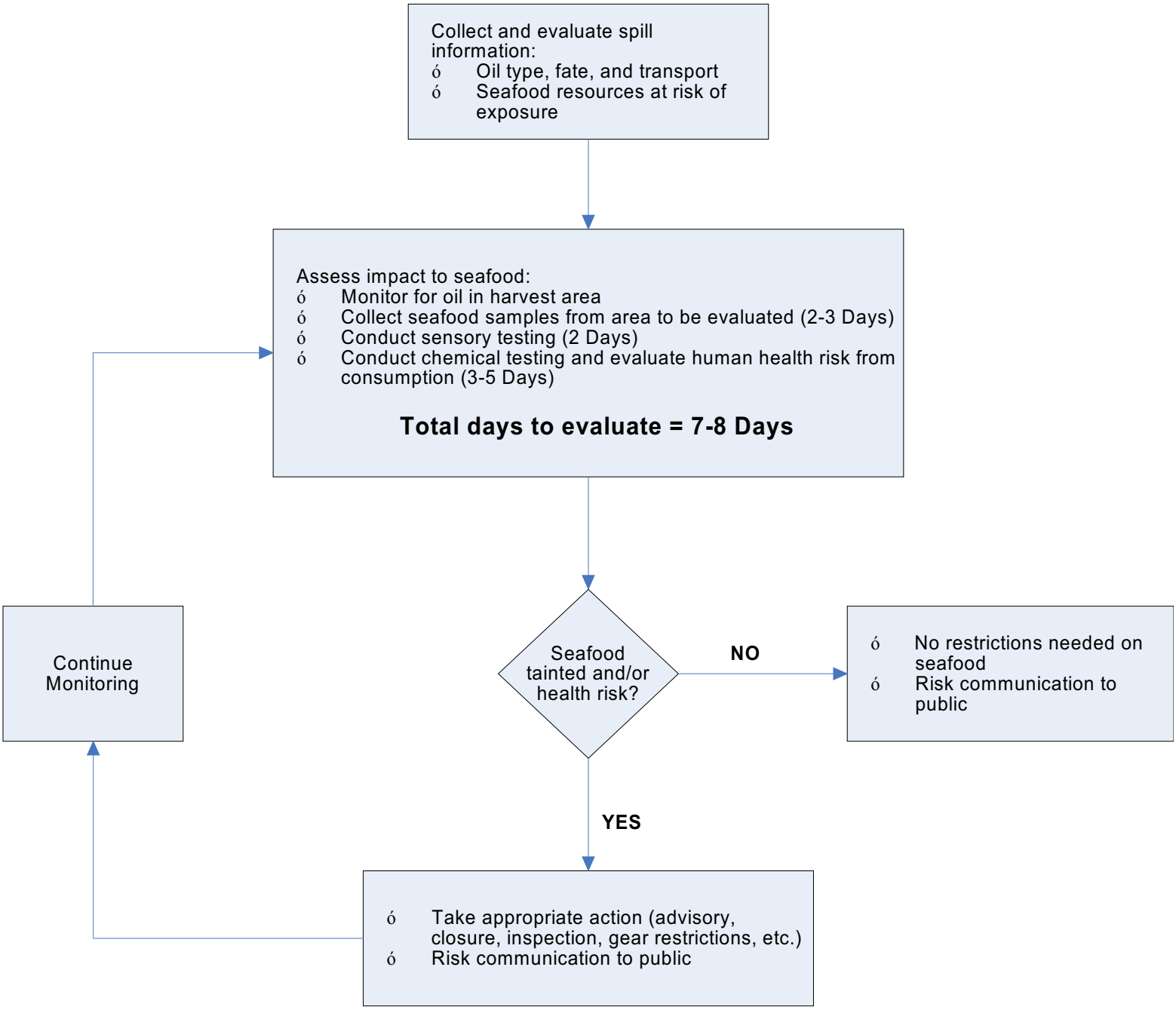
Evaluation of Buffer Zones and Surveillance

This activity focuses on ensuring the current closed areas are adequate to minimize risk of tainted seafood products entering the market. NOAA scientists and sensory experts will conduct organoleptic (smell and taste) and chemical analyses to determine areas for closure. Expert sensory assessors must be harmonized to the specific oil and dispersants being particular to the Deepwater Horizon spill. The plan allows for development of a cadre of screeners in the States to assist in sample evaluation which will require training by NMFS and FDA. NOAA will construct additional sensory lab locations appropriate for sensory evaluation. The capacity of the chemical laboratories must be increased to accommodate the large amounts of samples to be analyzed and to provide for field rapid screening analyses.

For actual activity of defining and refining the areas to be closed it will be necessary to have four expert personnel based in a central location, beginning with Pascagoula, MS, and have samples brought to them. This location will move as necessary depending upon the movement and coverage area of the oil slick. The team of four will be rotated every two weeks. As the situation warrants, additional teams will be set in other areas for short periods of time.

Protocol for Re-Opening

This activity focuses on the sensory and chemical analysis necessary to reopen a previously closed area. The panel of expert sensory assessors will need to come together weekly (depending upon the duration of the spill and cleanup) when it is necessary to determine the re-opening of a closed fishery. Chemical analyses will also be conducted on tissue samples to confirm organoleptic results.


Collect and evaluate spill information:
ó Oil type, fate, and transport
ó Seafood resources at risk of exposure
Assess impact to seafood:
ó Monitor for oil in harvest area
ó Collect seafood samples from area to be evaluated (2-3 Days)
ó Conduct sensory testing (2 Days)
ó Conduct chemical testing and evaluate human health risk from consumption (3-5 Days)
Total days to evaluate = 7-8 Days
Seafood tainted and/or health risk?
NO
ó No restrictions needed on seafood
ó Risk communication to public
YES
ó Take appropriate action (advisory, closure, inspection, gear restrictions, etc.)
ó Risk communication to public
Continue Monitoring

John,

Gary Reisner was the lead on this and can answer your questions. The plan is attached.

Steve

----- Original Message -----
From: John Rapp <John.Rapp@noaa.gov>
Date: Tuesday, May 25, 2010 3:12 pm
Subject: Re: Seafood Surveillance/Sampling Plan and Funding
To: Steven.Gallagher@noaa.gov
Cc: "Sarri, Kristen" <KSarri@doc.gov>, "Medina, Monica" <Monica.Medina@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>, "Oliver, John" <John.Oliver@noaa.gov>, "Kennedy, David" <David.Kennedy@noaa.gov>, "Schwaab, Eric" <Eric.Schwaab@noaa.gov>, "Wilson, Steven" <Steven.Wilson@noaa.gov>, "Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>

> Steve,
>
> Are all components of the original plan - re-opening protocol,
> surveillance, dockside, and long-line sampling - still included in the
>
> initial segment of funding or did we have to cut something?
>
> Thanks,
> John
>
> Steven.Gallagher@noaa.gov wrote:
> > Kris,
> >
> > We have moved from 90 days to 30 days? Correct, we heard back from
> Coast Guard yesterday that the OSLTF emergency fund expenditures are
> at $81M and growing against a cap of $100M. USCG is taking steps to
> limit spending authority until Congress approves transfer of $100M.
> As a result, the plan is to approve NOAA sampling work in 30 day
> increments versus longer term requested.
> >
> >
> > How does that impact the 6-months and 9-months sampling?
> >
> > At this point, it does not impact other than administrative burden
> to get individual approvals.
> >
> > Are we assured of funding for 60-days after the initial 30?
> >
> > Yes.
> >
> > How does the tightness of OSLTF emergency funds impact other NOAA request?
> >
> > We are moving forward with a 3rd PRFA agreement of $4M for cover
> NOAA activities. It is unclear at this time if the tightness will
> impact this request.
> >
> > As I indicated, we will report back if further pressure is needed.
>
> >
> > Steve
> >
> >

> >
> > ----- Original Message -----
> > From: "Sarri, Kristen" <KSarri@doc.gov>
> > Date: Tuesday, May 25, 2010 10:11 am
> > Subject: RE: Seafood Surveillance/Sampling Plan and Funding
> > To: "Gallagher, Steven" <Steven.Gallagher@noaa.gov>
> > Cc: "Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John"
> <John.Rapp@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>,
> "Oliver, John" <John.Oliver@noaa.gov>, "Kennedy, David"
> <David.Kennedy@noaa.gov>, "Schwaab, Eric" <Eric.Schwaab@noaa.gov>,
> "Wilson, Steven" <Steven.Wilson@noaa.gov>, "Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>
> >
> >
> >> Steve,
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> >> Thanks for following up. We have moved from 90 days to 30 days?
> How
> >> does that impact the 6-months and 9-months sampling? Are we
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> >> of funding for 60-days after the initial 30?
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> >> This area of need was specifically identified by the WH and DHS as
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> >> area that we should make sure NOAA was getting the resources necessary.
> >>
> >> How does the tightness of OSLTF emergency funds impact other NOAA request?
> >>
> >> Thanks, Kris
> >>
> >> _____
> >> From: Steven.Gallagher [
> >> Sent: Tuesday, May 25, 2010 10:01 AM
> >> To: Sarri, Kristen
> >> Cc: Medina, Monica; Rapp, John; Reisner, Gary; Oliver, John;
> Kennedy,
> >> David; Schwaab, Eric; Wilson, Steven; Lugo, Lauren
> >> Subject: Re: Seafood Surveillance/Sampling Plan and Funding
> >>
> >> Kris,
> >>
> >> We have this under control at the moment and do not need assistance
> at
> >> this point.
> >>
> >> Gary Reisner, NMFS CFO, is in contact with the correct folks at
> USCG
> >> and working the issues. Per USCG, OSLTF emergency funds are tight
> >
> >> and they have asked for a 30 day plan with the intent to extend.
> >>
> >> Reisner sent the plan to USCG last night and we are awaiting
> approval
> >> today. We will let you know if this effort is not on track.
> >>
> >> Thanks.
> >>
> >> Steve.
> >>

> >> Sarri, Kristen wrote:
> >> Hey Guys,
> >>
> >> I am working on an email on seafood safety to make sure that our
> >> efforts are moving forward. I wanted to make sure that I am
> correct
> >> on the funding for the sampling program and that all is secured
> with
> >> OR&R and Coast Guard.
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> >> We requested $6.6 million for 90-days for the seafood sampling
> plan.
> >> To confirm, has Coast Guard approved the funding for the full
> amount?
> >> When will NOAA start receiving the funding?
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> >> Also, I think we had a request in for 6-months and 9-months? What
> is
> >> the status of that request?
> >>
> >> Thanks, Kris
> >>
> > Return-path: <Steven.Gallagher@noaa.gov>
> > Received: from vmail6.nems.noaa.gov ([140.90.121.176])
> > by mail.nos.noaa.gov (Sun Java System Messaging Server 6.2-7.05
> (built Sep 5
> > 2006)) with ESMTP id <0L2Z00L0BNY3TI70@mail.nos.noaa.gov>; Tue,
> > 25 May 2010 14:42:03 -0400 (EDT)
> > Received: from noaa.gov ([127.0.0.1])
> > by vmail6.nems.noaa.gov (Sun Java System Messaging Server 6.2-7.05
> (built Sep
> > 5 2006)) with ESMTP id <0L2Z004PINY34M80@vmail6.nems.noaa.gov>; Tue,
> > 25 May 2010 14:42:03 -0400 (EDT)
> > Received: from [173.79.121.247] by vmail6.nems.noaa.gov (mshttpd); Tue,
> > 25 May 2010 14:42:03 -0400
> > Date: Tue, 25 May 2010 14:42:03 -0400
> > From: Steven.Gallagher@noaa.gov
> > Subject: Re: RE: Seafood Surveillance/Sampling Plan and Funding
> > In-reply-to: <0FCF0CAD622EDA42B4C1D445867A179A9FAC387144@EMAIL1.email.doc.gov>
> > To: "Sarri, Kristen" <KSarri@doc.gov>
> > Cc: "Medina, Monica" <Monica.Medina@noaa.gov>,
> > "Rapp, John" <John.Rapp@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>,
> > "Oliver, John" <John.Oliver@noaa.gov>,
> > "Kennedy, David" <David.Kennedy@noaa.gov>,
> > "Schwaab, Eric" <Eric.Schwaab@noaa.gov>,
> > "Wilson, Steven" <Steven.Wilson@noaa.gov>,
> > "Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>
> > Message-id: <dc2037ec34c8ee85.4bfbe1bb@noaa.gov>
> > MIME-version: 1.0
> > X-Mailer: Sun Java(tm) System Messenger Express 6.2-7.05 (built Sep
> 5 2006)
> > Content-type: text/plain; charset=us-ascii
> > Content-language: en
> > Content-transfer-encoding: 7bit
> > Content-disposition: inline
> > X-Accept-Language: en
> > Priority: normal
> > References: <0FCF0CAD622EDA42B4C1D445867A179A9FAC3870DA@EMAIL1.email.doc.gov>

> > <4BFBD7FF.4070804@noaa.gov>
> > <0FCF0CAD622EDA42B4C1D445867A179A9FAC387144@EMAIL1.email.doc.gov>
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> > Kris,
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> > From: "Sarri, Kristen" <KSarri@doc.gov>
> > Date: Tuesday, May 25, 2010 10:11 am
> > Subject: RE: Seafood Surveillance/Sampling Plan and Funding
> > To: "Gallagher, Steven" <Steven.Gallagher@noaa.gov>
> > Cc: "Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John"
> <John.Rapp@noaa.gov>, "Reisner, Gary" <Gary.Reisner@noaa.gov>,
> "Oliver, John" <John.Oliver@noaa.gov>, "Kennedy, David"
> <David.Kennedy@noaa.gov>, "Schwaab, Eric" <Eric.Schwaab@noaa.gov>,
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> >> From: Steven.Gallagher [
> >> Sent: Tuesday, May 25, 2010 10:01 AM
> >> To: Sarri, Kristen
> >> Cc: Medina, Monica; Rapp, John; Reisner, Gary; Oliver, John;
> Kennedy,
> >> David; Schwaab, Eric; Wilson, Steven; Lugo, Lauren
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> >> the status of that request?
> >>
> >> Thanks, Kris
> >>

Received(Date): Wed, 26 May 2010 10:58:39 -0400
From: "Beck, Nancy" <Nancy_Beck@omb.eop.gov>
Subject: RE: EPA sensitivity
To: Monica Medina <Monica.Medina@noaa.gov>,"Fitzpatrick, Michael A." <Michael_A._Fitzpatrick@omb.eop.gov>,Steven Wilson <Steven.Wilson@noaa.gov>, John Rapp <John.Rapp@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>, Steve.Murawski@noaa.gov,"Kennedy, David" <David.Kennedy@noaa.gov>, usha.vanarasi@noaa.gov,John E Stein <John.E.Stein@noaa.gov>, Nancy Thompson <Nancy.Thompson@noaa.gov>

Monica-

Funny you should ask. I just got off the phone with Jeff Bigler at EPA (Office of Water). He's been on all our protocol calls and has been checking in daily and I have kept him updated. He was anxious for a revised protocol as he has a meeting with Bob P today and wanted to make sure he was up to speed on everything. I assured him that I had shared all information that I had with him.

EPA comments on the protocol were sent by Ed Ohanian (also EPA Office of Water) and I believe he and Steve Wilson spoke yesterday as well. Ed has also been very engaged. Rita Schoeny from EPA (also office of water) has been reviewing the protocol and participating in discussions.

The original point of contact from EPA was Jim Jones (OPPTS— not OW) (present for Bob P at last Mondays meeting), but then he went on travel and told us Jeff Bigler would be the new point of contact.

I hope this helps!
Nancy

From: Monica Medina [mailto:monica.medina@noaa.gov]
Sent: Wednesday, May 26, 2010 10:31 AM
To: Fitzpatrick, Michael A.; Beck, Nancy; Steven Wilson; John Rapp; Spring, Margaret; 'Steve.Murawski@noaa.gov'; Kennedy, David; usha.vanarasi@noaa.gov; John E Stein; Nancy Thompson
Subject: EPA sensitivity

Hi all – Our fisheries labs are doing testing using the dispersant samples we have received to look at the impact (toxicity) of dispersant on fish. We are doing this related to our seafood safety work. We talked about this testing in response to a question from Gov Jindal today on the Govs call. EPA is now mad because they did not realize (at least at the top levels) that we were doing this work. I thought EPA had been part of all the discussions on the protocols for seafood safety and what we are doing to test for impacts of oil and dispersants on fish. I need some

assistance figuring out who at EPA has been part of all the protocol process so that I can make sure those people are connecting with their leadership within EPA. I told EPA that while we NOAA were doing this testing, we were not making "toxicity" determinations on our own – that is not strictly our responsibility – typically FDA would do that. However, when asked who was making this determination now, I said I thought it was this interagency group being run by OMB/OIRA and that EPA was involved. That is my understanding, but if I am wrong about that I need to correct the record with EPA.

Michael and Nancy – can you assist in particular? I think Bob P and Diane T there may need some reassurance that they have not been left out of the process.

Thanks! Monica

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

Received(Date): Wed, 26 May 2010 11:00:33 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: EPA sensitivity
To: John Rapp <John.Rapp@noaa.gov>, Monica Medina <Monica.Medina@noaa.gov>
Cc: Usha Varanasi <Usha.Varanasi@noaa.gov>,John E Stein <John.E.Stein@noaa.gov>, Nancy Thompson <Nancy.Thompson@noaa.gov>

All,

Here is the scoop. This is low level exposure testing in Pascagoula and Seattle specifically for the purposes of knowing what the biochemical signature of COREXIT is in fish flesh and organs of the fish we are sampling for seafood safety testing. We need to know how these products break down in known exposed fish so we know what to look for. It is not, repeat NOT toxicity testing of the animals exposed to various concentrations of the product.

Please let them know we are within our propse lanes on this and if there was interest in the latter of course it would be well coordinated with EPA.

ok?

-Steve

John Rapp wrote:

> Steve et al.:
>
> In thinking about what Monica wrote, is she using "toxicity" incorrectly? My understanding of the work the NWFSC is conducting is that we're testing whether live fish exposed to dispersants have detectable amounts of the substance in their tissue. Levels outside of agreed to ranges would indicate that fish or seafood are not marketable. Is there a chance that EPA thinks we're conducting these tests in Seattle to indicate fish survival when exposed to dispersant (even though I don't think that's the purpose)? If so, I think that may be the root of EPA's reaction.
>
> Thoughts? Corrections?
>
> John
>
> Monica Medina wrote:
>
> > Hi all – Our fisheries labs are doing testing using the dispersant samples we have received to look at the impact (toxicity) of dispersant on fish. We are doing this related to our seafood safety work. We talked about this testing in response to a question from Gov Jindal today on the Govs call. EPA is now mad because they did not realize (at least at the top levels) that we were doing this work. I thought EPA had been part of all the discussions on the protocols for seafood safety and what we are doing to test for

impacts of oil and dispersants on fish. I need some assistance figuring out who at EPA has been part of all the protocol process so that I can make sure those people are connecting with their leadership within EPA. I told EPA that while we NOAA were doing this testing, we were not making "toxicity" determinations on our own – that is not strictly our responsibility – typically FDA would do that. However, when asked who was making this determination now, I said I thought it was this interagency group being run by OMB/OIRA and that EPA was involved. That is my understanding, but if I am wrong about that I need to correct the record with EPA.

Michael and Nancy – can you assist in particular? I think Bob P and Diane T there may need some reassurance that they have not been left out of the process.

Thanks! Monica

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

Received(Date): Wed, 26 May 2010 13:32:35 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: prep for wh meeing
To: "Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>
Cc: "richard.m.love@noaa.gov" <Richard.M.Love@noaa.gov>,"'Steven Murawski (Steve.Murawski@noaa.gov)'" <Steve.Murawski@noaa.gov>,"Bob Haddad (robert.haddad@noaa.gov)" <Robert.Haddad@noaa.gov>,"jacqueline.j.rousseau@noaa.gov" <Jacqueline.J.Rousseau@noaa.gov>

Hi, I have asked Richard to come down to see Beth to get :

(1) the current status sheet on where are research cruises and other activities are

(2) where are platforms are

(3) how we are organized on science.

I need this for a WH meeting at 5 so I can explain what NOAA is doing on science coordination.

Anything I can have that shows how we coordinate interagency on science on Deepwater would be helpful, too.

Thank you!

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

(202) 482-3436

Received(Date): Wed, 26 May 2010 13:36:17 -0400
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: Re: prep for wh meeing
To: Margaret Spring <Margaret.Spring@noaa.gov>
Cc: "Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"richard.m.love@noaa.gov" <Richard.M.Love@noaa.gov>,"'Steven Murawski (Steve.Murawski@noaa.gov)'" <Steve.Murawski@noaa.gov>,"Bob Haddad (robert.haddad@noaa.gov)" <Robert.Haddad@noaa.gov>,"jacqueline.j.rousseau@noaa.gov" <Jacqueline.J.Rousseau@noaa.gov>

Beth, I'm on my way up to assist. I've been getting materials from Steve on this.

Margaret Spring wrote:
>
> Hi, I have asked Richard to come down to see Beth to get :
>
>
>
> (1) the current status sheet on where are research cruises and
> other activities are
>
> (2) where are platforms are
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> (3) how we are organized on science.
>
>
>
> I need this for a WH meeting at 5 so I can explain what NOAA is doing
> on science coordination.
>
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>
> Anything I can have that shows how we coordinate interagency on
> science on Deepwater would be helpful, too.
>
>
>
> Thank you!
>
>
>
> Margaret Spring
>
> Chief of Staff
>
> National Oceanic and Atmospheric Administration
>
> U.S. Department of Commerce
>
> 14th & Constitution Avenue NW, Room 5128
>
> Washington, DC 20230
>
> (202) 482-3436
>
>
>

--
Gabrielle Dreyfus, PhD
AAAS S&T Fellow
National Oceanic and Atmospheric Administration
Office of the Undersecretary
1401 Constitution Ave, NW
Washington, DC 20230
(202) 482-9153

Received(Date): Wed, 26 May 2010 14:25:16 -0400
From: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Subject: Re: Fw: FW: EPA sensitivity
To: John Rapp <John.Rapp@noaa.gov>

John-- should we talk? lots of emails and questions flying around. call me when you get a chance if you don't have all the info you need.

John Rapp wrote:

> Kris,
>
> I can meet anytime between 3 and 5. Just let me know when you're free.
>
> John
>
> Sarri, Kristen wrote:
>
> > John, please track down what happened as we were told last week that we had a sample that we were testing against and Lois was working on getting formula from company.
> >
> > I can't emphasize enough that if we are missing something that you need then please let us know so that we can try to help get this information from the NIC or WH or OMB.
> >
> > We need an internal NOAA meeting(s) to discuss were we are on this issue and what we are missing. The plan is to roll this out next week and I am really not comfortable that we have the pieces together and I am worried about how long it is taking?
> >
> > What are people's schedule like between 3 and 5pm today?
> >
> > We need this effort completed by the end of this week.

From: John Rapp [mailto:John.Rapp@noaa.gov]

Sent: Wednesday, May 26, 2010 11:29 AM
To: Varanasi, Usha
Cc: Medina, Monica; Kennedy, David; Oliver, John; Schwaab, Eric; Sarri, Kristen; Spring, Margaret; Murawski, Steve
Subject: Re: Fw: FW: EPA sensitivity

Usha,

I'll be touching base with Dave Westerholm who's on the ground in LA and can help me secure a sample of dispersant. So I can get you what you need, please let me know the volume of dispersant you're seeking and where to send it.

Thanks,
John

Monica Medina wrote:

Hi all - See below. OK it has been almost a week since the initial request. Why does the NW lab not have a sample of the dispersant yet? Dave and John - can you make sure this happens today? Also if they are not testing the actual samples in NW, is the Pascagoula lab doing that testing. It was reported on our morning call that our labs are testing impacts of dispersants on fish. We at HQ need some basic information -- which labs are doing what tests on what types of fish. Administrator Jackson could complain to Dr L about what we are doing here. I have do doubt that we should be doing these tests but I need to know exactly what we are doing in order to defend it.

John Rapp - do you have time to run this to ground - I need a definite answer on this.

Thanks, Monica

From: Usha Varanasi <Usha.Varanasi@noaa.gov>
To: Monica Medina <Monica.Medina@noaa.gov>
Sent: Wed May 26 10:51:21 2010
Subject: Re: FW: EPA sensitivity

I can only speak for our lab. Just so you know, we are still trying to get the current dispersant from NOAA's OR&R folks who I assume are authorized for such exercise.
Meanwhile we are testing for some of our exposure set up for zebrafish embryo for sub lethal effects (such as cardiac dysfunction) using old sample of COREXIT dispersant. We are not doing classic toxicity test for water or fish.

Monica Medina wrote:

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

From: Monica Medina
Sent: Wednesday, May 26, 2010 10:31 AM
To: 'Fitzpatrick, Michael A.'; 'Beck, Nancy'; Steven Wilson; 'John Rapp'; Spring, Margaret; 'Steve.Murawski@noaa.gov'; Kennedy, David; 'usha.vanarasi@noaa.gov'; John E Stein; Nancy Thompson
Subject: EPA sensitivity

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Thanks! Monica

Monica Medina

Principal Deputy Under Secretary

National Oceanic and Atmospheric Administration

Department of Commerce

(202) 482-3567

monica.medina@noaa.gov

-- Usha Varanasi, Ph.D. Science and Research Director Northwest Fisheries Science Center, and Acting Science and Research Director Southwest Fisheries Science Center DOC/NOAA/NMFS Seattle: Phone - (206) 860-6795, http://www.nwfsc.noaa.gov La Jolla: Phone - (858) 546-7067, http://swfsc.noaa.gov "We must be the change we wish to see in the world..." - Mahatma Gandhi

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
(301)713-2355 x145
fax: (301)713-1081

Received(Date): Wed, 26 May 2010 15:20:46 -0400
From: "Robert.Haddad" <Robert.Haddad@noaa.gov>
Subject: RE: prep for wh meeing
To: 'Margaret Spring' <Margaret.Spring@noaa.gov>,'Oil spill staff' <dwh.staff@noaa.gov>
Cc: "'richard.m.love@noaa.gov'" <Richard.M.Love@noaa.gov>,'Steven Murawski' <Steve.Murawski@noaa.gov>,"'jacqueline.j.rousseau@noaa.gov'" <Jacqueline.J.Rousseau@noaa.gov>
Presentation1.ppt

Beth: Don't forget the following:

(1) Reaching out to non-federal community via (a) science summit, (2) individual peer-level discussions, and (3) sea-grant community

(2) Working with EPA on nightly basis reviewing the deep water dispersant monitoring data being collected in developing a go/no go position for continued deep water dispersant use

(3) Working with USFWS, NPS, LA, AL, MS, and FL Trustees on NRDA. Developing and implementing agreed upon sampling plans for baseline and impacted resource assessment.

(4) Attached is an operational picture of samples locations through 5/25/10

Bob

Robert Haddad, Ph.D.

Chief, Assessment & Restoration Division

NOAA/Office of Response & Restoration

Office: 301.713.4248x110

Cell: 240.328.9085

www.darrp.noaa.gov

www.response.restoration.noaa.gov

From: Margaret Spring [mailto:Margaret.Spring@noaa.gov]
Sent: Wednesday, May 26, 2010 1:33 PM
To: Oil spill staff (dwh.staff@noaa.gov)
Cc: richard.m.love@noaa.gov; 'Steven Murawski (Steve.Murawski@noaa.gov)'; Bob Haddad (robert.haddad@noaa.gov); jacqueline.j.rousseau@noaa.gov
Subject: prep for wh meeing

Hi, I have asked Richard to come down to see Beth to get :

(1) the current status sheet on where are research cruises and other activities are

(2) where are platforms are

(3) how we are organized on science.

I need this for a WH meeting at 5 so I can explain what NOAA is doing on science coordination.

Anything I can have that shows how we coordinate interagency on science on Deepwater would be helpful, too.

Thank you!

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

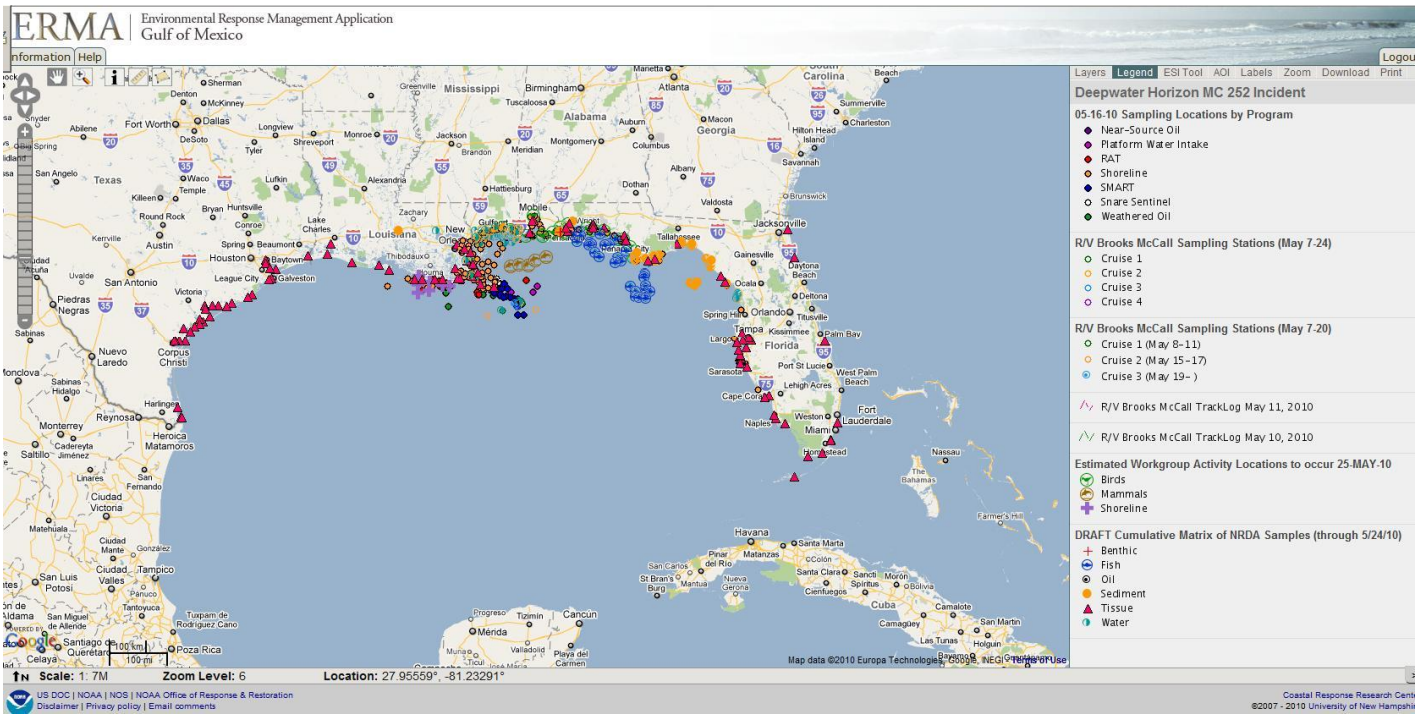
U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

(202) 482-3436

Sampling Locations through 5/25/10
As part of the on-going DWH MC252
Response and NRDA



Received(Date): Wed, 26 May 2010 15:43:39 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: Re: Fw: FW: EPA sensitivity
To: "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'Monica.Medina@noaa.gov'" <Monica.Medina@noaa.gov>
Cc: "'David.Kennedy@noaa.gov'" <David.Kennedy@noaa.gov>,"'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Eric.Schwaab@noaa.gov'" <Eric.Schwaab@noaa.gov>,"'KSarri@doc.gov'" <KSarri@doc.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'Steve.Murawski@noaa.gov'" <Steve.Murawski@noaa.gov>,"'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>

Got it will convey all this to epa.

From: John Rapp <John.Rapp@noaa.gov>
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: 'David.Kennedy@noaa.gov' <David.Kennedy@noaa.gov>; 'John.Oliver@noaa.gov' <John.Oliver@noaa.gov>; 'eric.schwaab@noaa.gov' <Eric.Schwaab@noaa.gov>; 'KSarri@doc.gov' <KSarri@doc.gov>; 'margaret.spring@noaa.gov' <Margaret.Spring@noaa.gov>; 'Steve.Murawski@noaa.gov' <Steve.Murawski@noaa.gov>; 'usha.varanasi@noaa.gov' <Usha.Varanasi@noaa.gov>
Sent: Wed May 26 11:11:59 2010
Subject: Re: Fw: FW: EPA sensitivity

Monica,

I'll work with folks at OR&R to understand when a sample of COREXIT can be provided.

Per your thread with EPA, please see what Steve Murawski just wrote us (cut and pasted here for all):

Steve Murawksi wrote:

Here is the scoop. This is low level exposure testing in Pascagoula and Seattle specifically for the purposes of knowing what the biochemical signature of COREXIT is in fish flesh and organs of the fish we are sampling for seafood safety testing. We need to know how these products break down in known exposed fish so we know what to look for. It is not, repeat NOT toxicity testing of the animals exposed to various concentrations of the product.

Please let them know we are within our proposed lanes on this and if there was interest in the latter of course it would be well coordinated with EPA.

So, I think EPA may be upset because they think we're doing a classic toxicity test. As Steve wrote, we are not but would coordinate with them should there be interest in doing do.

John

Monica Medina wrote:

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John Rapp - do you have time to run this to ground - I need a definite answer on this.

Thanks, Monica

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To: Monica Medina <Monica.Medina@noaa.gov>
Sent: Wed May 26 10:51:21 2010
Subject: Re: FW: EPA sensitivity

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From: Monica Medina <Monica.Medina@noaa.gov>
Subject: Re: Fw: FW: EPA sensitivity
To: "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'KSarri@doc.gov'" <KSarri@doc.gov>

I will be back at 5:15 - meet then?

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To: Sarri, Kristen <KSarri@doc.gov>
Cc: Varanasi, Usha <Usha.Varanasi@noaa.gov>; Medina, Monica <Monica.Medina@noaa.gov>; Kennedy, David <David.Kennedy@noaa.gov>; Oliver, John <John.Oliver@noaa.gov>; Schwaab, Eric <Eric.Schwaab@noaa.gov>; Spring, Margaret <Margaret.Spring@noaa.gov>; Murawski, Steve <Steve.Murawski@noaa.gov>; Schiffer, Lois <Lois.Schiffer@noaa.gov>; Lugo, Lauren <Lauren.B.Lugo@noaa.gov>
Sent: Wed May 26 14:22:08 2010
Subject: Re: Fw: FW: EPA sensitivity

Kris,

I can meet anytime between 3 and 5. Just let me know when you're free.

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>
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> We need an internal NOAA meeting(s) to discuss were we are on this issue and what we are missing. The plan is to roll this out next week and I am really not comfortable that we have the pieces together and I am worried about how long it is taking?
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> What are people's schedule like between 3 and 5pm today?

We need this effort completed by the end of this week.

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Wednesday, May 26, 2010 11:29 AM
To: Varanasi, Usha
Cc: Medina, Monica; Kennedy, David; Oliver, John; Schwaab, Eric; Sarri, Kristen; Spring, Margaret; Murawski, Steve
Subject: Re: Fw: FW: EPA sensitivity

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Received(Date): Wed, 26 May 2010 16:11:59 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: RE: Fw: FW: EPA sensitivity
To: "Rapp, John" <John.Rapp@noaa.gov>, "Medina, Monica" <Monica.Medina@noaa.gov>

That would be good.

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Wednesday, May 26, 2010 3:57 PM
To: Medina, Monica
Cc: Sarri, Kristen
Subject: Re: Fw: FW: EPA sensitivity

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At the happy hour?? :)

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(202) 482-3567

monica.medina@noaa.gov

-- Usha Varanasi, Ph.D. Science and Research Director Northwest Fisheries Science Center, and Acting Science and Research Director Southwest Fisheries Science Center DOC/NOAA/NMFS Seattle: Phone - (206) 860-6795, http://www.nwfsc.noaa.gov La Jolla: Phone - (858) 546-7067, http://swfsc.noaa.gov "We must be the change we wish to see in the world..." - Mahatma Gandhi

Received(Date): Wed, 26 May 2010 17:04:25 -0400
From: john rapp <John.Rapp@noaa.gov>
Subject: Re: Dispersant sample
To: "'randy.j.tebeest@noaa.gov'" <Randy.J.Tebeest@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>
Cc: "'Dave.Westerholm@noaa.gov'" <Dave.Westerholm@noaa.gov>,"'David.Kennedy@noaa.gov'" <David.Kennedy@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Thanks Randy. If they don't have samples there, please get a contact that I can work through for a sample over the next day or so.

John

----- Original Message -----
From: Randy J. Tebeest <randy.j.tebeest@noaa.gov>
To: 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'Randy.J.Tebeest@noaa.gov' <Randy.J.Tebeest@noaa.gov>
Cc: 'Dave.Westerholm@noaa.gov' <Dave.Westerholm@noaa.gov>; 'David.Kennedy@noaa.gov' <David.Kennedy@noaa.gov>; 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
Sent: Wed May 26 17:02:58 2010
Subject: Re: Dispersant sample

Understand. I'll try to see if there are any sources at the unified command when I get there and give a status call or email by cob.
rt

----- Original Message -----
From: John Rapp <John.Rapp@noaa.gov>
To: Randy Tebeest <Randy.J.Tebeest@noaa.gov>
Cc: Dave.Westerholm@noaa.gov <Dave.Westerholm@noaa.gov>; Dave Kennedy <David.Kennedy@noaa.gov>; _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Sent: Wed May 26 16:23:47 2010
Subject: Re: Dispersant sample

Thanks Randy. You can reach me at 202-253-1573. As an FYI - I'm interested in securing a total of 8 liters of dispersant. (2) 2 liters of COREXIT 9500 and 2 (2) liters of 9527. So, each of the following addresses should receive 4 liters each:

Dr. Spencer Garrett

[redacted] *b6*

and

Walt Dickhoff
2725 Montlake Blvd East
Bldg - East, Room 401
Seattle, WA 98112-2097

Thanks,
John

Dave.Westerholm@noaa.gov wrote:
> Back at lsu but randy tebeest is heading to robert uc and will work the issue
> John can you send him your number

> -----Original Message-----
> From: dave.westerholm@noaa.gov
> Date: Wed, 26 May 2010 18:31:54
> To: John Rapp<John.Rapp@noaa.gov>
> Cc: Dave Kennedy<david.kennedy@noaa.gov>; _HQ Deep Water Horizon Staff<dwh.staff@noaa.gov>
> Subject: Re: Dispersant sample
>
> John
> I'm not in Robert today
> Will try to get you name after my meetings
>
> ------Original Message------
> From: John Rapp
> To: Dave Westerholm
> Cc: Dave Kennedy
> Cc: _HQ Deep Water Horizon Staff
> Subject: Dispersant sample
> Sent: May 26, 2010 11:35 AM
>
> Dave,
>
> Dave Kennedy suggested that I contact you about securing a sample of
> dispersant for NW Fisheries Science Center to use as a part of their
> seafood testing protocols. Can you either handle this directly for me
> while you're down there or direct me to someone who I can work with? I
> need 2 liters expressed to Seattle. Address is:
>
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> 2725 Montlake Blvd East
> Bldg - East, Room 401
> Seattle, WA 98112-2097
>
> Thanks,
> John
>
>

Received(Date): Wed, 26 May 2010 17:06:45 -0400
From: "Randy J. Tebeest" <Randy.J.Tebeest@noaa.gov>
Subject: Re: Dispersant sample
To: "'john.rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'Randy.J.Tebeest@noaa.gov'" <Randy.J.Tebeest@noaa.gov>
Cc: "'Dave.Westerholm@noaa.gov'" <Dave.Westerholm@noaa.gov>,"'David.Kennedy@noaa.gov'" <David.Kennedy@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Will do. I expect that's probably the more likely scenario.
rt

----- Original Message -----
From: john rapp <john.rapp@noaa.gov>
To: 'randy.j.tebeest@noaa.gov' <randy.j.tebeest@noaa.gov>; 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>
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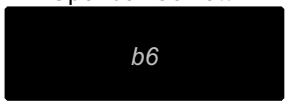
----- Original Message -----
From: Randy J. Tebeest <randy.j.tebeest@noaa.gov>
To: 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'Randy.J.Tebeest@noaa.gov' <Randy.J.Tebeest@noaa.gov>
Cc: 'Dave.Westerholm@noaa.gov' <Dave.Westerholm@noaa.gov>; 'David.Kennedy@noaa.gov' <David.Kennedy@noaa.gov>; 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
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> Cc: Dave Kennedy
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> Sent: May 26, 2010 11:35 AM
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>
> Walt Dickhoff
> 2725 Montlake Blvd East
> Bldg - East, Room 401
> Seattle, WA 98112-2097
>
> Thanks,
> John
>
>

Received(Date): Thu, 27 May 2010 07:57:29 -0400
From: Tim Gallagher <timothy.gallagher@noaa.gov>
Subject: Today's notes
To: dwh.staff@noaa.gov, Joe Inslee <Joe.Inslee@noaa.gov>,Ken Barton <Ken.Barton@noaa.gov>, Jen Pizza <Jen.Pizza@noaa.gov>
Daily DWH-MC252 Update - 27May10.docx

Please see attached

Following successful functional checks and final engineering & procedure review by DOE, the Unified Command authorized BP to execute the BOP Top Kill. BP initiated the process at 1300 CDT. With 50% of the heavy drilling fluid expected to discharge through the riser plus the high rate of flow required, BP cautioned that it may look worse before it gets better. Initial reports indicate there are no technical problems & the procedure is progressing. We anxiously await the outcome.

In preparation for Top Kill, the unified command secured all surface ops and source mitigation - subsea dispersant injection operations ceased, the Riser Insertion Tube Tool removed & the D/S Enterprise relocated. By the shutdown @ 1100, only one in situ burn and one aerial dispersant application occurred. Relief well drilling suspended while Top Kill underway

Scattered thunderstorms throughout the area caused additional challenges to the response. Overflights were either delayed or truncated. Dispatched flights had to dodge weather making observations of some areas difficult. As a result of the abbreviated flight schedules - no overflight of the source or southeastern protrusion conducted yesterday. USCG C-130 flying from St Petersburg investigated NGA SeaStar anomaly and observed nothing in the suspect area.

In the interest of safety, OPS also recalled deployed SCAT personnel relatively early in the day. Provided extra time to complete plan to remove the buried oil on Grand Terre Island – a significant OPS & logistics challenge. Additionally, SCAT received approval to conduct a high volume, low pressure seawater flush of approximately 1 mile area of impacted mangrove near Devil's Point in the east Timbalier Bay. (SCAT metrics being reported to the parishes to show no preferential treatment from the response)

Preliminary fluorometry data from the Pelican is beginning to arrive through the data flow channels established by the science cruise coordination group. Data suggests that there is oil ivo the well. However the concentrations are in the ppm/ppb range and does not support the presence of a subsurface plume. Water samples from the McCall at the same depth corroborate the Pelican's fluorometry readings.

Initial indications from the Dispersant Conference are that it is worthwhile and productive.

Anticipate the President to announce the conclusions & results of the Flow Rate Technical Group today.

NIC – Berm plan not recommended by Solutions Group. Passback - FOSC requests a recount.

Document ID: 0.7.19.656.1

Received(Date): Thu, 27 May 2010 12:38:32 +0000
From: Lauren.B.Lugo@noaa.gov
Subject: Re: Fwd: Seafood Safety
To: John Rapp <John.Rapp@noaa.gov>, Steve Murawski <Steve.Murawski@noaa.gov>
Cc: John Oliver <John.Oliver@noaa.gov>, Sam Rauch <Samuel.Rauch@noaa.gov>,Eric Schwaab <Eric.Schwaab@noaa.gov>,"deb.lambert@noaa.gov" <Deb.Lambert@noaa.gov>,"beth.lumsden@noaa.gov" <Beth.Lumsden@noaa.gov>,"gloria.thompson@noaa.gov" <Gloria.Thompson@noaa.gov>,Brian Pawlak <Brian.T.Pawlak@noaa.gov>

I am available at 11am but not at 6pm today. Lauren

Sent from my Verizon Wireless BlackBerry

From: John Rapp <John.Rapp@noaa.gov>
Date: Thu, 27 May 2010 07:04:33 -0400
To: Steve Murawski<Steve.Murawski@noaa.gov>; <Lauren.B.Lugo@noaa.gov>
Cc: John Oliver<John.Oliver@noaa.gov>; Sam Rauch<Samuel.Rauch@noaa.gov>; Eric Schwaab<Eric.Schwaab@noaa.gov>; deb.lambert@noaa.gov<Deb.Lambert@noaa.gov>; beth.lumsden@noaa.gov<Beth.Lumsden@noaa.gov>; gloria.thompson@noaa.gov<Gloria.Thompson@noaa.gov>; Brian T Pawlak<Brian.T.Pawlak@noaa.gov>
Subject: Fwd: Seafood Safety

All,

Please see below and ID critical issues by 11. Please also forward to anyone I missed.

John

Begin forwarded message:

> **From:** "Sarri, Kristen" <KSarri@doc.gov>
> **Date:** May 26, 2010 10:44:11 PM EDT
> **To:** "Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>, "Reich, Jay" <JReich@doc.gov>
> **Cc:** "Gilson, Shannon" <SGilson@doc.gov>
> **Subject: Seafood Safety**
>
> I talked to Michael and they are arranging a 6pm call tomorrow on seafood safety. I haven't seen a notice yet; however, John if you could let the appropriate people know that would be helpful.
>
> By 11 am tomorrow, please identify all outstanding issues for resolution on the call. Particularly, if we have not gotten a sample of dispersant.

Thanks! Kris

Received(Date): Thu, 27 May 2010 10:05:03 -0400
From: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Subject: Re-opening Protocol for NOAA Clearance
To: John Rapp <John.Rapp@noaa.gov>
Cc: Eric Schwaab <Eric.Schwaab@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Samuel Rauch <Samuel.Rauch@noaa.gov>,Nancy Thompson <Nancy.Thompson@noaa.gov>,Steven Wilson <Steven.Wilson@noaa.gov>, Beth Lumsden <Beth.Lumsden@noaa.gov>,Gloria Thompson <Gloria.Thompson@noaa.gov>,Rebecca Chiampi <Rebecca.Chiampi@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>, Deb Lambert <Deb.Lambert@noaa.gov>
2010_0526_Opening Protocol_NMFS FDA clean copy.doc

INTERNAL DELIBERATION

John R.-- Attached is the latest clean version of the re-opening protocol which has undergone some revision based on comments from OMB. This version was cleared by Eric Schwaab. At Monica Medina's request, the comments from OMB were communicated directly to Steve Wilson in the NOAA Seafood Inspection Program as well as Pete Koufopoulos with the FDA. These two worked jointly on edits to this document.

In an effort to get the review process moving forward, NOAA Fisheries requests that NOAA headquarters review and clear the attached version of the protocol and move forward to DOC for review and clearance. FDA is doing the same. If upper management in either agency or Department have comments or want edits to this document, I request we not go back to the beginning to reset the process again at a staff level with FDA. Rather, we make the edits and each Department submit its own "final version" to OMB. If there are any significant changes that result from the agency or Departmental review or if OMB feels that its comments were not adequately addressed once they receive the document, OMB should be the arbiter of further changes (which we expect should be minor, if any).

NOAA and FDA are in very close agreement on the contents of this protocol from what I understand. FDA management requested yesterday to review the baseline data before they will clear the protocol which could slow the review process on their side.

There is one other potential issue which we want to flag. One of OMB's comments was that EPA be consulted under the protocol. EPA input was considered and incorporated by FDA on the criteria and tables in the back of the document dealing with cancer and non-cancer risk levels. As far as we understand, EPA's comments were addressed. And, EPA is named in the protocol as having been consulted with in the development of this document. However, EPA is not named as a consultative agency under the re-opening process section in this protocol. It is possible EPA may request additional consultation under the re-opening process which should be discussed if the issue is raised.

Please review and advise.
Lauren

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
(301)713-2355 x145
fax: (301)713-1081

5/26/2010

PROTOCOL FOR INTERPRETATION AND USE OF SENSORY TESTING AND ANALYTICAL CHEMISTRY RESULTS FOR RE-OPENING OIL-IMPACTED AREAS CLOSED TO SEAFOOD HARVESTING

INTRODUCTION

The U.S. Food and Drug Administration (FDA) operates a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, the Public Health Service Act and related regulations. Actions and criteria discussed in this protocol should be followed in addition to the provisions already in place. The National Oceanic and Atmospheric Administration (NOAA) administers the status of Federal waters for seafood harvest. After an oil spill has occurred, Federal and State agencies are faced with the issue of determining when the seafood from the previously contaminated area may once again be safe for harvest and human consumption. NOAA Office of Response and Restoration (OR&R) publication entitled *Managing Seafood Safety after an Oil Spill*[1] provides agencies guidance in such situations. This guidance and other input from both NOAA and the FDA have been used in consultation with the Environmental Protection Agency (EPA) to establish this protocol.

In establishing this protocol it is important to understand the following principles:

- NOAA and the FDA are working with other federal and state agencies to protect consumers from adulterated and unsafe seafood, while minimizing undue economic burden on any impacted seafood industries.

- Once oil or chemical contaminants are visually observed on the surface, it is recommended that the fishery be closed until free of sheen, and subsequent testing has been completed to confirm that seafood from affected areas are wholesome and safe for human consumption and use in animal feed.

- After the initial fishery closure, the best approach for determining the safety and acceptability of seafood from oil-contaminated areas is one that involves organoleptic analysis of products (i.e. sensory testing) followed by chemical analysis.

- In establishing the closure areas, NMFS has placed a buffer zone around known contaminated waters to make certain a wide enough closure is in place. Areas within this closure may be re-opened when as it is determined oil contamination did not occur and the area was closed only as a precautionary measure. This protocol does not apply to re-openings of this nature.

Oil contamination presents two kinds of risks: the presence of petroleum taint that renders seafood unfit for human consumption, and the presence of polycyclic aromatic hydrocarbons (PAHs) that are chemical hazards. Federal government and state agencies therefore close oil-contaminated harvest areas for health reasons.

Oil-contaminated seafood is adulterated if the contamination is perceivable by olfaction (taint), or in the absence of taint, chemical analysis determines that the level of PAHs in it exceeds FDA levels of concern. Consequently, after an oil spill, seafood suspected of oil contamination can only be brought into interstate commerce when it passes both sensory testing for petroleum taint, and chemical analysis for PAHs.

Document ID: 0.7.19.584.1

The purpose of this protocol is to specify how the results of sensory testing and chemical analyses will be used in re-opening seafood closure areas. The principles of the protocol are as follows:

Generally:

1. The closure of a fishery assumes a worst case scenario, and is intended to protect seafood consumers until the safety of the seafood can be established.
2. Area re-opening will be based on an acceptable reduction of the threat of seafood exposure to oil contamination, and analyses that assure the safety and wholesomeness of the seafood. Threat of exposure will be based on past observations and the status of the spill and conditions.
3. Once seafood samples from an area pass sensory testing, area samples must also pass chemical analysis for PAHs before that fishery may be reopened.

Specific Re-opening Criteria:

1. Threat of exposure – Threat of exposure is sufficiently reduced based on past observations of previous spills, any baseline information collected, and the status of the spill and conditions.
2. Evaluation of oil movement – Confirmation that the closure area is free of sheen on the surface by visual observation and/or aerial reconnaissance, or the presence of oil in the water column through visual observation or water testing.
3. Assessment of seafood contamination by sensory testing – Determine if the seafood is contaminated by tissue collection and sensory testing. The acceptable condition is that all specimens must pass sensory testing conducted by an NMFS-FDA sensory panel following the protocol reviewed by the FDA.
4. Assessment of seafood contamination by chemical analyses – Chemical analyses are performed on samples that pass sensory assessment to confirm that PAH concentrations are below the applicable FDA levels of concern for human health.
5. Opening boundaries will be based on results of analyses (sensory and chemical) that demonstrate the product is:
   a. Untainted.
   b. Safe for human consumption.
6. Establish buffer zones between open and closed areas using chemical and sensory testing indices.
7. Re-openings may be fisheries specific.

ANALYSIS

1. NMFS sensory testing protocol reviewed by FDA.[2,3]
2. When sensory tested samples are acceptable, verify sensory testing outcomes with chemical analyses performed using the NMFS PAH method.[4]

ONGOING STUDIES

Additional investigation protocols may continue to be designed to assess sediment contamination, ecological injury and other environmental parameters. These investigations are not directly related to or considered a part of this protocol. However, data from these

Document ID: 0.7.19.584.1

investigations will be reviewed prior to making any decisions to reopen an area or a fishery and may be the basis for requiring additional sampling/analysis as per this protocol. For example, sediment chemical data from fishery areas may be used to identify contaminant "hot spots."

Water analysis for PAHs may be used to gain an understanding of the effectiveness of the containment and cleanup of the spill. In addition water analysis may be used to determine the concentration and effect of the dispersants used. Such water analysis may be performed on representative samples of the affected water column. The necessary sampling criteria will be based on many factors including the area of the closure, depth of the water within the closure, and sites and species considered for re-opening of harvest areas or fishery. With regard to inshore fisheries such as molluscan shellfish, sediment samples may also be analyzed.

Surveillance of fisheries should be conducted in response to identified "hot spots" or other relevant changes in environmental conditions (e.g., increases in PAH levels in water or seafood) if warranted, based on the protocol defined.

RE-OPENING PROCESS

NOAA and the FDA will review the data generated as a result of the implementation of this protocol, evaluate the accuracy and quality of the data and assess compliance with the agreed criteria. Based on this assessment, NMFS may re-open federal waters subject to the closure and FDA may approve the fishery for interstate commerce. NMFS and FDA will coordinate with State agencies for the re-opening of State commercial waters to ensure orderly and appropriately enforced re-openings. No partial re-openings will be allowed which are unenforceable, i.e., gear that requires harvesters to segregate their catch and discard catch from fisheries that remain closed.

Sensory testing based on NOAA Technical Memorandum NOS OR&R 9: *Guidance on Sensory Testing and Monitoring of Seafood for Presence of Petroleum Taint Following an Oil Spill*[2] will be utilized. A panel of ten expert assessors from NMFS and the FDA will conduct sensory testing. Samples will be examined by organoleptic methods both in the raw and cooked states. If a particular fishery passes sensory testing within a defined sampling area, chemical analyses will be performed on that particular fishery and area[4]. If the chemical analyses pass the risk based assessment criteria for the species in question, that zone will be considered for re-opening. If an area fails sensory testing it will be retested within a designated time period.

SELECTION OF TARGET PAHs and LEVELS OF CONCERN

Most petrochemical products such as diesel oil and crude oil contain aromatic components: mono-, bi-, and polycyclic aromatic hydrocarbons. Well-established liquid chromatography (LC)/fluorescence detection (FD) and gas chromatography (GC)/mass spectrometry (MS) methods are used to separate and quantify these contaminants in seafood.

PAHs are abundant in our environment; in addition to sources from petrochemical products they are generated by nearly all pyrolytic processes including forest fires, char-grilled and smoked meat, and fuel combustion in automobiles. Crude petroleum is composed of a complex mixture of many hundreds of compounds. Most of the compounds are volatile, and evaporate to produce the pungent odor of petroleum. Others are less volatile and persist in the environment (e.g. Formation of tar balls or sink to the bottom). The polycyclic aromatic hydrocarbons (PAHs) in petroleum mixtures are of greatest concern for human health because of their persistence (i.e.

Document ID: 0.7.19.584.1

Lower evaporation rates), and their potential for toxic or carcinogenic effects. The subset of 8 PAHs and their alkylated homologues (16) selected for critical analysis in the Deepwater Horizon Spill (Table I) are among the most studied PAHs in petroleum mixtures. These compounds have been found through experience with many previous oil spills (e.g. North Cape Oil Spill, 1996, Rhode Island) to reflect the potential for toxic or carcinogenic effects of the mixture of compounds present in crude petroleum[5].

Most seafood risk assessments conducted after oil spills in the U.S. have followed an approach used by the FDA in 1990 after the *Exxon Valdez* oil spill in Prince William Sound, Alaska[6,7]. This approach uses a set of calculations to determine finfish or shellfish (harvested for human consumption) PAH tissue concentrations, expressed in benzo[a]pyrene (BaP) equivalents (μg/kg), above which an appropriate risk level for cancer is exceeded. Non-cancer levels of concern are also evaluated. The values for several variables in these calculations can be adjusted on a case-by-case basis, depending on seafood consumption rates of the exposed population, average body weight of the exposed population, estimates of exposure time for a particular spill, and the cancer risk level deemed appropriate. This approach to calculating seafood advisory levels has since been used after several other oil spills, including the *North Cape* spill in Rhode Island, the *Julie N* spill in Maine, the *Kure* spill in California, and the *New Carissa* spill in Oregon.

The level of appropriate risk is the maximum level of individual lifetime carcinogenic risk that is considered appropriate by risk managers. The relative risk level used by FDA for low dose cancer risk calculations is 1×10^{-6}. This implies that exposure to PAH in seafood below a specified tissue concentration, at a defined consumption rate, and over a defined exposure period would yield a lifetime cancer risk of no greater than 1 in 1,000,000. A risk level of 1×10^{-6} was used in the risk calculations by FDA for the Exxon Valdez oil spill, as well as those done by the State of Rhode Island for the *North Cape* oil spill, the State of California for the *Kure* oil spill, and the State of Oregon for the *New Carissa* oil spill. Some states have considered higher risk levels, such as 1×10^{-5} (a lifetime cancer risk of no greater than 1 in 100,000) to be appropriate. For instance, a risk level of 1×10^{-5} was used in the risk assessment conducted by the State of Maine for the Julie N oil spill and the State of Alaska for the *Kuroshima* oil spill[1].

Depending upon levels of petrogenic PAHs accumulated by aquatic species, consumption of petroleum contaminated fishery products may pose a health risk to seafood consumers. The risk is exacerbated among those who are considered "high level" consumers of fishery products. These concerns necessitate consideration of consumption rates for high-level eaters of fish, shrimp, crab and shellfish in order to avoid errors inherent in extrapolating average per capita consumption values to distinct subpopulations. FDA uses the 90th percentile of national consumption data from the National Health and Nutrition Examination Survey (NHANES) for fish, shrimp, crab and shellfish for calculating risk of PAH exposure in high-level consumers of commercial seafood products.

Table I shows the criteria for re-opening based upon non-cancer risks and a 1×10^{-6} cancer risk for different PAHs. For the non-cancer evaluation (naphthalene, flourene and anthracene/phenanthracene) the EPA Integrated Risk Information System (IRIS) reference dose (RfD) values were used[8]. For the cancer evaluation (fluoranthene, pyrene, benz(a)anthracene, chrysene and benzo(a)pyrene), the EPA IRIS cancer slope factor values were used[9]. As discussed above, 90th percentile consumption values were used for generating calculations for

Document ID: 0.7.19.584.1

consumption of shrimp and crabs, oysters and finfish. For generating cancer risk values, exposures are assumed to last for 5 years.

Recent results from PAH chemical analysis of finfish (grouper, red snapper and red drum) collected by NOAA from the unaffected Dauphin Island area in early May show that PAH target levels shown in Table I are below detection limits (LOD <0.4 ppb). An evaluation of PAH chemical analysis data collected by the NOAA mussel watch program showed that in 2007-2008 average concentrations were below FDA levels of concern in oysters. Nevertheless, final determinations of opening status of oil spill affected fisheries and areas will take into consideration available PAH background level data, and assumptions on duration of exposure.

Criteria for Determining Sensory Testing Acceptability

A minimum of 6 sub-samples per species from each area under consideration is required. A sub-sample will consist of an individual organism for finfish and multiple organisms for shrimp and shellfish, depending on the intact animal type (e.g. 3 to 6 blue crabs, 6 oysters, 0.4 – 0.5 lb shrimp). The samples will be evaluated by a panel of a minimum of 10 expert assessors in the raw and cooked state.

For a closed fisheries area to be considered for reopening, all of the following tests must be performed (these criteria are based on past oil spill information and ensure a high confidence level that the seafood is not tainted by oil):

- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant odor from each raw sub-sample. If any sub-sample fails, the site fails.
- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant odor from each cooked meat sub-sample. If any sub-sample fails, the site fails.
- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant taste (or flavor) in the cooked state. If any sub-sample fails, the site fails.
- In establishing the closure areas, NMFS has placed a buffer zone around known contaminated waters to make certain a wide enough closure is in place. Areas within this closure may be re-opened when as it is determined oil contamination did not occur and the area was closed only as a precautionary measure. This protocol does not apply to re-openings of this nature.

Sampling Criteria for Chemical Analyses

For crabs: Chemical analysis of edible muscle from a minimum of ten (10) individuals, of legal size if available, will be collected from each sampling site. Tissue samples from individual crabs will be combined to make separate composite samples of the muscle tissue and hepatopancreas. All crabs will be collected from sites selected as commonly used fishing grounds.

Document ID: 0.7.19.584.1

For all other seafood: Chemical analysis of a sample of edible tissue from a composite (of at least 200 grams) from a minimum of 10 or more individuals collected at or near the locations specified.

Table I

Criteria for Reopening Areas Closed from Oil Spills Based on Concentrations of Chemical Contaminants in Seafood

Chemical[1]	Levels of Concern (ppm) at a 10^{-6} cancer risk level			Basis[2]
	90 g/day (Shrimp and Crabs)	120 g'day (Oysters)	160 g/day (Finfish)	
Napthalene	31	23	20	Non-cancer EPA RfD; 70 kg bw
Flourene	31	23	20	Non-cancer EPA RfD; 70 kg bw
Anthracene/phenanthracene	233	175	150	Non-cancer EPA RfD; 70 kg bw
Fluoranthene	0.026	0.020	0.015	Cancer 0.02 B(a)P equivalency
Pyrene	0.041	0.031	0.025	Cancer 0.13B(a)P equivalency
Benz(a)anthracene	0.38	0.28	0.20	Cancer 0.014B(a)P equivalency
Chrysene	0.41	0.31	0.25	Cancer 0.013B(a)P equivalency
Benzo(a)pyrene	0.005	0.004	0.003	10^{-6} Cancer risk = (34ng/p/d)(70/5yr)[5]

[1] Includes alkylated homologues, specifically C-1, C-2, C-3, C-4 napthalenes; C-1, C-2, C-3 fuorenes; C-1, C-2, C-3 anthracenes/phenanthracenes; C-1, C-2 pyrenes .

[2]With respect to the Basis:

RfD based criteria:	**RfD**
Napthalene:	(0.04 mg/kg/d x 70kg)/Daily Intake (kg)
Fluorene:	(0.04 mg/kg/d x 70kg)/ Daily Intake (kg)
Anthracene:	(0.30 mg/kg/d x 70kg)/ Daily Intake (kg)

Alkylated homologues assumed to have similar toxicities to the parent compound. Anthracene and phenanthracene were combined because routine chemical analysis does not distinguish between the analogues of these two compounds.

Cancer risk-(q*)-based criteria:	**q^{*10}**
Fluoranthene:	[34ng x (70/5)]/[Daily Intake (g) x 0.02]
Pyrene:	[34ng x (70/5)]/[Daily Intake (g) x 0.13]
Benz(a)anthracene:	[34ng x (70/5)]/[Daily Intake (g) x 0.014]
Chrysene:	[34ng x (70/5)]/[Daily Intake (g) x 0.013]
Benzo(a)pyrene:	[34ng x (70/5)]/[Daily Intake (g)]

One-in-a-million increase in the lifetime upper bound cancer risk adjusted to account for exposures which are expected to last longer than 5 years (70/5 yr). For any sample containing fluoranthene, pyrene, benz(a)anthracene, chrysene, or benzo(a)pyrene, the sum of the individual ratios of the detected levels cannot exceed 1.

References:

1. Yender, R., Michel, J., and Lord, C. (2002). Managing Seafood Safety after an Oil Spill. Seattle: Hazardous Materials Response Division, Office of Response and Restoration, National Oceanic and Atmospheric Administration. 72 pp. Available: http://response.restoration.noaa.gov/book_shelf/963_seafood2.pdf

2. Reilly, T.I., and York, R.K. (2001) Guidance on sensory testing and monitoring of seafood for presence of petroleum taint following an oil spill. NOAA Technical Memorandum NOS OR&R 9. Seattle: Office of Response and Restoration, National Oceanic and Atmospheric Administration. 109 pp.

Document ID: 0.7.19.584.1

3. Yender, R. (2003). Improving Seafood Safety Management after an Oil Spill. In: *Proceedings of the 2003 International Oil Spill Conference*. 8 pp. Available: http://www.iosc.org/papers/IOSC%202003%20a416.pdf

4. Sloan, C.A., Brown, D.W., Pearce, R.W., Boyer, R.H., Bolton, J.L., Burrows, D.G., Herman, D.P., and Krahn, M.M. (2004). Extraction, Cleanup, and Gas Chromatography/Mass Spectrometry Analysis of Sediments and Tissues for Organic Contaminants. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-59, 47 pp.

5. Bolger, M. and Carrington, C. (1999). Hazard and risk assessment of crude oil in subsistence seafood samples from Prince William Sound: Lessons learned from the Exxon Valdez. In L. Jay Field et al. (eds.). *Evaluating and Communicating Subsistence Seafood Safety in a Cross-Cultural Context: Lessons Learned from the Exxon Valdez Oil Spill.* Pensacola: Society of Environmental Toxicology and Chemistry. Pp. 195-204.

6. Bolger, M., Henry, S.H., and Carrington, C.D. (1996). Hazard and risk assessment of crude oil contaminants in subsistence seafood samples from Prince William Sound. Proc. *EXXON VALDEZ Oil Spill Symposium,* S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright (eds.). American Fisheries Symposium Vol. 18, pp. 837-843.

7. Bolger, M. and Carrington, C. (1999). Estimation of Risk Associated with consumption of Oil-Contaminated Fish and Shellfish by Alaskan Subsistence Fishermen using a Benzo[a]pyrene Equivalency Approach. In L. Jay Field et al. (eds.). *Evaluating and Communicating Subsistence Seafood Safety in a Cross-Cultural Context: Lessons Learned from the Exxon Valdez Oil Spill. Pensacola: Society of Environmental Toxicology and Chemistry. Appendix 3: Report of the Quantitative Risk Assessment Committee, Center for Food Safety and Applied Nutrition, U.S. food and Drug Administration,* 9 August 1990, pp. 295-304

8. The RfD value is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a NOAEL, LOAEL or benchmark dose, with uncertainty factors generally applied to reflect limitations of the data used.

9. Slope factor values represent an upper bound, approximating a 95% confidence limit, on the increased cancer risk from a lifetime exposure to an agent. This estimate, usually expressed in units of proportion (of a population) affected per mg/kg-day, is generally reserved for use in the low-dose region of the dose-response relationship, that is, for exposures corresponding to risks less than 1 in 100.

10. US Environmental Protection Agency (USEPA). 2000. Guidance for assessing contaminant data for use in fish advisories, Volume 2: Risk assessment and fish consumption limits, Third Edition. EPA 823/B/00/008. Washington, DC: Office of Science and Technology, USEPA.

Document ID: 0.7.19.584.1

Received(Date): Thu, 27 May 2010 08:53:44 -0700
From: Greg.Baker@noaa.gov
Subject: Re: [Fwd: Fw: [Fwd: Re: Corexit 9500 & 9527 Request]]
To: James Nance <James.M.Nance@noaa.gov>
Cc: John.Rapp@noaa.gov, Nicolle.R.Rutherford@noaa.gov,Spencer.Garrett@noaa.gov, Nathaniel.Scholz@noaa.gov
Attachment

Yesterday I directed TDI Brooks lab (where we have a limited amount of dispersant under our NRDA custody) to ship samples of Corexit 9500 and 9527A to Northwest Fisheries Sci Center, to arrive Friday, tomorrow. Only a small amount is being shipped today to NWFSC for analytical chemistry, I assume future needs for toxicity studies still need to be addressed.

Greg Baker, Office of Response and Restoration

Received(Date): Thu, 27 May 2010 09:42:14 -0500
From: James Nance <James.M.Nance@noaa.gov>
Subject: [Fwd: Fw: [Fwd: Re: Corexit 9500 & 9527 Request]]
To: Greg.Baker@noaa.gov

Greg: Dan Hahn asked me to send you a message to see if we have enough Corexit already collected to send this quantity to Seattle. Give me a call 409-682-1834. Thanks.

-------- Original Message --------

Subject: Fw: [Fwd: Re: Corexit 9500 & 9527 Request]
Date: Thu, 27 May 2010 09:28:46 -0400
From:john rapp <John.Rapp@noaa.gov>
To:'james.m.nance@noaa.gov' <James.M.Nance@noaa.gov>

Used the wrong address the first time..

----- Original Message -----
From: john rapp
To: 'jim.nance@noaa.gov' <jim.nance@noaa.gov>
Sent: Thu May 27 09:24:40 2010
Subject: Fw: [Fwd: Re: Corexit 9500 & 9527 Request]

Jim,

Can you get the COREXIT as requested below? This is a high priority all the way up the chain to Commerce, so please let me ASAP if you're not the right guy.

Thanks,
John

----- Original Message -----
From: Gary Shigenaka <gary.shigenaka@noaa.gov>
To: John Rapp <John.Rapp@noaa.gov>
Cc: Nicolle.R.Rutherford <Nicolle.R.Rutherford@noaa.gov>; Mary Gill <Mary.Gill@noaa.gov>; Randy J TeBeest <Randy.J.Tebeest@noaa.gov>; Jordan Stout <Jordan.Stout@noaa.gov>; Ed Levine <Ed.Levine@noaa.gov>; Dave Westerholm <Dave.Westerholm@noaa.gov>; David Kennedy <David.Kennedy@noaa.gov>; dwh.staff@noaa.gov <dwh.staff@noaa.gov>; Timothy Gallagher <timothy.gallagher@noaa.gov>
Sent: Thu May 27 07:39:04 2010
Subject: Re: [Fwd: Re: Corexit 9500 & 9527 Request]

All,

I would suggest that this be routed through the NMFS liaison on-scene in Houma, Jim Nance.

gs

John Rapp wrote:

> Hi Nicolle,
>
> Sorry for the confusion. I asked for a total of 8 liters in the email
> yesterday because I need the same quantities you shipped to Pascagoula
> shipped to Seattle. Is it possible to ship the same to Seattle for
> arrival tomorrow?
>
> Please let me know ASAP. Also, I'm checking with my folks to
> understand why Pascagoula hasn't confirmed receipt.
>
> Thanks,
> John
>
> On May 26, 2010, at 11:11 PM, "Nicolle.R.Rutherford"
> <Nicolle.R.Rutherford@noaa.gov <mailto:Nicolle.R.Rutherford@noaa.gov>>
> wrote:
>
>> Hi Mary,
>> A request for two liters each of Corexit 9500 and 9527 was made by
>> NMFS through Tim Gallagher and was acted on two days ago. See
>> below. I have not received confirmation from Dr. Garrett that the
>> samples were received, although the samples should have been received
>> yesterday. The request was for only two liters of each of the
>> dispersants, not four.
>>
>> Nicolle
>>
>> -------- Original Message --------
>> Subject: Re: Corexit 9500 & 9527 Request
>> Date: Mon, 24 May 2010 14:43:44 -0700
>> From: Nicolle.R.Rutherford <nicolle.r.rutherford@noaa.gov
>> <mailto:nicolle.r.rutherford@noaa.gov>>
>> To: Spencer Garrett <Spencer.Garrett@noaa.gov
>> <mailto:Spencer.Garrett@noaa.gov>>
>> CC: Tim Gallagher <timothy.gallagher@noaa.gov
>> <mailto:timothy.gallagher@noaa.gov>>, Gary Shigenaka
>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>>
>> References: <4BF5B114.9010405@noaa.gov
>> <mailto:4BF5B114.9010405@noaa.gov>>
>>
>>
>>
>> Hello Dr. Garrett,
>> I just FedExed a cooler containing two liters each of Corexit 9500 and
>> 9527 to you for use as part of the sensory analysis program. The cooler
>> should arrive by noon tomorrow. When it arrives, please confirm that
>> you have received it.
>>
>> If you have any questions or concerns, please don't hesitate to call or
>> email.
>>
>> Cheers,
>> Nicolle Rutherford
>> Biologist
>> Emergency Response Division
>> National Oceanic and Atmospheric Administration (NOAA)
>> 206-300-2994

>> >
>> >
>>
>>
>> <nicolle_r_rutherford.vcf>

Yesterday I directed TDI Brooks lab (where we have a limited amount of dispersant under our NRDA custody) to ship samples of Corexit 9500 and 9527A to Northwest Fisheries Sci Center, to arrive Friday, tomorrow. Only a small amount is being shipped today to NWFSC for analytical chemistry, I assume future needs for toxicity studies still need to be addressed.

Greg Baker, Office of Response and Restoration

Received(Date): Thu, 27 May 2010 09:59:10 -0700
From: Nicolle.R.Rutherford@noaa.gov
Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
To: Spencer Garrett <Spencer.Garrett@noaa.gov>
Cc: Nancy.Thompson@noaa.gov, Calvin.Walker@noaa.gov,Emille Cole <Emille.Cole@noaa.gov>, LaShonda Finch <LaShonda.Finch@noaa.gov>,John.Rapp@noaa.gov, Gary.Shigenaka@noaa.gov, Randy.J.Tebeest@noaa.gov,James.M.Nance@noaa.gov, Dave.Westerholm@noaa.gov, David.Kennedy@noaa.gov,timothy.gallagher@noaa.gov

Package was delivered Tuesday, 25 May 2010 at 10:08 am. It was signed for by C. Bergman.
Nicolle

----- Original Message -----
From: Spencer Garrett <Spencer.Garrett@noaa.gov>
Date: Thursday, May 27, 2010 6:54 am
Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
To: Nancy.Thompson@noaa.gov
Cc: Calvin.Walker@noaa.gov, Emille Cole <Emille.Cole@noaa.gov>, Nicolle.R.Rutherford@noaa.gov, Emille Cole <Emille.Cole@noaa.gov>, LaShonda Finch <LaShonda.Finch@noaa.gov>

> not to my knowledge having it checked now--Nicolle pls verify FEDEX
> tracking #'s--Regards--Spencer
>
> Nancy.Thompson@noaa.gov wrote:
> > do we have this?
> > ---
> >
> > Subject:
> > Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
> > From:
> > John Rapp <John.Rapp@noaa.gov>
> > Date:
> > Thu, 27 May 2010 06:57:47 -0400
> > To:
> > Steve Murawski <Steve.Murawski@noaa.gov>, Nancy Thompson
> > <Nancy.Thompson@noaa.gov>
> >
> > To:
> > Steve Murawski <Steve.Murawski@noaa.gov>, Nancy Thompson
> > <Nancy.Thompson@noaa.gov>
> >
> >
> > Corexit was shipped Monday. Since Dr. Garrett hasn't received it,
> has
> > he followed up with niccole. Seems like we should be able to track
> the
> > package.
> >
> > John
> >
> >
> > Begin forwarded message:
> >
> >> *From:* "Nicolle.R.Rutherford" <Nicolle.R.Rutherford@noaa.gov

> >> <>>
> >> *Date:* May 26, 2010 11:11:59 PM EDT
> >> *To:* Mary Gill <Mary.Gill@noaa.gov <>>
> >> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
> >> <>>, Randy J TeBeest
> >> <Randy.J.Tebeest@noaa.gov <>>, Jordan
> >> Stout <Jordan.Stout@noaa.gov <>>, Ed
> >> Levine <Ed.Levine@noaa.gov <>>, Dave
> >> Westerholm <Dave.Westerholm@noaa.gov
> >> <>>, David Kennedy
> >> <David.Kennedy@noaa.gov <>>, John Rapp
> >> <John.Rapp@noaa.gov <>>, dwh.staff@noaa.gov
> >> <>, Timothy Gallagher
> >> <timothy.gallagher@noaa.gov <>>
> >> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
> >>
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> >> yesterday. The request was for only two liters of each of the
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> >>
> >> Nicolle
> >>
> >> -------- Original Message --------
> >> Subject: Re: Corexit 9500 & 9527 Request
> >> Date: Mon, 24 May 2010 14:43:44 -0700
> >> From: Nicolle.R.Rutherford <nicolle.r.rutherford@noaa.gov
> >> <>>
> >> To: Spencer Garrett <Spencer.Garrett@noaa.gov
> >> <>>
> >> CC: Tim Gallagher <timothy.gallagher@noaa.gov
> >> <>>, Gary Shigenaka
> >> <Gary.Shigenaka@noaa.gov <>>
> >> References: <4BF5B114.9010405@noaa.gov
> >> <>>
> >>
> >>
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> >> Hello Dr. Garrett,
> >> I just FedExed a cooler containing two liters each of Corexit 9500
> and
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> >> should arrive by noon tomorrow. When it arrives, please confirm
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> >> you have received it.
> >>
> >> If you have any questions or concerns, please don't hesitate to
> call or
> >> email.
> >>
> >> Cheers,

> >> Nicolle Rutherford
> >> Biologist
> >> Emergency Response Division
> >> National Oceanic and Atmospheric Administration (NOAA)
> >> 206-300-2994
> >> >
> >> >
> >>
> >>

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Nicolle

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Date: Thursday, May 27, 2010 6:54 am
Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
To: Nancy.Thompson@noaa.gov
Cc: Calvin.Walker@noaa.gov, Emille Cole <Emille.Cole@noaa.gov>, Nicolle.R.Rutherford@noaa.gov, Emille Cole <Emille.Cole@noaa.gov>, LaShonda Finch <LaShonda.Finch@noaa.gov>

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> tracking #'s--Regards--Spencer
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> > Date:
> > Thu, 27 May 2010 06:57:47 -0400
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> > Begin forwarded message:
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> >> *From:* "Nicolle.R.Rutherford" <Nicolle.R.Rutherford@noaa.gov
> >> <>>
> >> *Date:* May 26, 2010 11:11:59 PM EDT
> >> *To:* Mary Gill <Mary.Gill@noaa.gov <>>
> >> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
> >> <>>, Randy J TeBeest
> >> <Randy.J.Tebeest@noaa.gov <>>, Jordan
> >> Stout <Jordan.Stout@noaa.gov <>>, Ed
> >> Levine <Ed.Levine@noaa.gov <>>, Dave
> >> Westerholm <Dave.Westerholm@noaa.gov

> >> <>>, David Kennedy
> >> <David.Kennedy@noaa.gov <>>, John Rapp
> >> <John.Rapp@noaa.gov <>>, dwh.staff@noaa.gov
> >> <>, Timothy Gallagher
> >> <timothy.gallagher@noaa.gov <>>
> >> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
> >>
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> >> Nicolle
> >>
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> >> Date: Mon, 24 May 2010 14:43:44 -0700
> >> From: Nicolle.R.Rutherford <nicolle.r.rutherford@noaa.gov
> >> <>>
> >> To: Spencer Garrett <Spencer.Garrett@noaa.gov
> >> <>>
> >> CC: Tim Gallagher <timothy.gallagher@noaa.gov
> >> <>>, Gary Shigenaka
> >> <Gary.Shigenaka@noaa.gov <>>
> >> References: <4BF5B114.9010405@noaa.gov
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> >> Biologist
> >> Emergency Response Division
> >> National Oceanic and Atmospheric Administration (NOAA)
> >> 206-300-2994
> >> >
> >> >
> >>
> >>

Received(Date): Thu, 27 May 2010 14:08:36 -0400
From: "Robert.Haddad" <Robert.Haddad@noaa.gov>
Subject: RE: Plume question
To: 'Beth Dieveney' <Beth.Dieveney@noaa.gov>,'Steve Murawski' <Steve.Murawski@noaa.gov>,'_HQ Deep Water Horizon Staff' <dwh.staff@noaa.gov>
Cc: 'Beth Lumsden' <Beth.Lumsden@noaa.gov>

All: This was a partnership cruise. As this is a fish closing question, Steve really needs to jump in. But, I believe that:

(1) I believe that the current Federal fish closure covers this area (assuming they are talking about a plume measured 22 miles NE of the well head on a heading towards Mobile Bay).
(2) We agree that the dispersed surface oil is having a deleterious impact on fish larvae (as well as plankton, eggs, etc. - things that are concentrated in the neuston layer - and this is one of the resource areas that is being closely assessed for spill-related injury.
(3) I assume that the state's have closed their Nearshore Waters?

As for the nature of the plume.
(4) The article does not mention how the plume was detected or measured. We know they used a fluorometer - but are not sure how or if it was calibrated for petroleum. However, we shouldn't comment on the potential presence - yet alone the actual significance of such a plume, until we see what the water chemistry data say about unambiguously quantifiable hydrocarbon concentrations.

(5) We plan to get splits of the water samples from the WEATHERBIRD as soon as she makes port. Please let me know when/where to meet up with the WEATHERBIRD and ensure that they have splits ready for us to off-load,

Bob

Robert Haddad, Ph.D.
Chief, Assessment & Restoration Division
NOAA/Office of Response & Restoration
Office: 301.713.4248x110
Cell: 240.328.9085
www.darrp.noaa.gov
www.response.restoration.noaa.gov

-----Original Message-----
From: Beth Dieveney [mailto:Beth.Dieveney@noaa.gov]
Sent: Thursday, May 27, 2010 1:44 PM
To: Steve Murawski; Robert Haddad; _HQ Deep Water Horizon Staff
Cc: Beth Lumsden
Subject: Plume question

Steve and Bob~

See the below article. This is the article that has generated the task for determining if the statements about the plume are accurate.
We have also been asked by Dr. Lubchenco if we should develop a statement especially in relation to fish closures.

Please provide information as you can.

Regards,

Beth

From: Kathryn Tolbert
Sent: 05/27/2010 01:02 PM EDT
To: David Fahrenthold
Cc: Juliet Eilperin; oilspill@washpost.com
Subject: plume -- dave pls make calls

APNewsBreak: New, giant sea oil plume seen in Gulf
BC-US--OilSpill-NewPlume,1stLd-Writethru
Eds: ADDS details of plume and its possible environmental effects, quotes.
APNewsBreak: New, giant sea oil plume seen in Gulf
JASON DEAREN
MATTHEW BROWN
Associated Press Writers
NEW ORLEANS (AP) - Marine scientists have discovered a massive new plume of what they believe to be oil deep beneath the Gulf of Mexico, stretching 22 miles from the leaking wellhead northeast toward Mobile Bay, Alabama.

The discovery by researchers on the University of South Florida College of Marine Science's Weatherbird II vessel is the second significant undersea plume recorded since the Deepwater Horizon exploded on April 20.

The thick plume was detected just beneath the surface down to about 3,300 feet, and is more than 6 miles wide, said David Hollander, associate professor of chemical oceanography at the school.

Hollander said the team detected the thickest amount of hydrocarbons, likely from the oil spewing from the blown out well, at about 1,300 feet in the same spot on two separate days this week.

The discovery was important, he said, because it confirmed that the substance found in the water was not naturally occurring and that the plume was at its highest concentration in deeper waters. The researchers will use further testing to determine whether the hydrocarbons they found are the result of dispersants or the emulsification of oil as it traveled away from the well.

The first such plume detected by scientists stretched from the well southwest toward the open sea, but this new undersea oil cloud is headed miles inland into shallower waters where many fish and other species reproduce.

The researchers say they are worried these undersea plumes may are the result of the unprecedented use of chemical dispersants to break up the oil a mile undersea at the site of the leak.

Hollander said the oil they detected has dissolved into the water, and is no longer visible, leading to fears from researchers that the toxicity from the oil and dispersants could pose a big danger to fish larvae and filter feeders such as sperm whales.

"There are two elements to it," Hollander said. "The plume reaching waters on the continental shelf could have a toxic effect, and we also may see a long term response as it cascades up the food web."

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary

14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Thu, 27 May 2010 15:04:54 -0400
From: "Beck, Nancy" <Nancy_Beck@omb.eop.gov>
Subject: Seafood Safety
To: "Beck, Nancy" <Nancy_Beck@omb.eop.gov>,"Fitzpatrick, Michael A." <Michael_A._Fitzpatrick@omb.eop.gov>,"Cuellar, Mariano-Florentino" <Mariano-Florentino_Cuellar@who.eop.gov>,"Mancini, Dominic J." <Dominic_J._Mancini@omb.eop.gov>,"Malanoski, Margaret A." <Margaret_A._Malanoski@omb.eop.gov>,"Rostker, David" <David_Rostker@omb.eop.gov>,"Perraut, Andrew B." <Andrew_B._Perraut@omb.eop.gov>,"Stebbins, Michael J." <Michael_J._Stebbins@ostp.eop.gov>,"Schmeissner, Peter J." <Peter_J._Schmeissner@ostp.eop.gov>,"Murawski, Steve" <Steve.Murawski@noaa.gov>, Mike.Taylor@fda.hhs.gov,"Hansen, Timothy" <Timothy.Hansen@noaa.gov>,"Wilson, Steven" <Steven.Wilson@noaa.gov>,"Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Sarri, Kristen" <KSarri@doc.gov>, "Medina, Monica" <Monica.Medina@noaa.gov>,Donald.Kraemer@fda.hhs.gov, "Dickey, Robert W" <Robert.Dickey@fda.hhs.gov>,"Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>,"Higginbottom, Heather A." <Heather_A._Higginbottom@who.eop.gov>,"Onek, Matthew M." <Matthew_M._Onek@who.eop.gov>,"Monje, Carlos A." <Carlos_A._Monje@who.eop.gov>,"Weatherly, Mark A." <Mark_A._Weatherly@omb.eop.gov>,"Lyon, Randolph M." <Randolph_M._Lyon@omb.eop.gov>,"Reilly, Thomas M." <Thomas_M._Reilly@omb.eop.gov>,"Fontenot, Keith J." <Keith_J._Fontenot@omb.eop.gov>,"Garufi, Marc" <Marc_Garufi@omb.eop.gov>,"Levenbach, Stuart" <Stuart_Levenbach@omb.eop.gov>,"Frey, Nathan J." <Nathan_J._Frey@omb.eop.gov>, Molly.Muldoon@fda.hhs.gov,Dora.Hughes@hhs.gov, Michael.Landa@fda.hhs.gov,"Buffa, Nicole" <Nicole_Buffa@ceq.eop.gov>,"Neyland, Kevin F." <Kevin_F._Neyland@omb.eop.gov>,"Hagan, Michael B." <Michael_B._Hagan@omb.eop.gov>,"Hart, Nicholas R." <Nicholas_R._Hart@omb.eop.gov>,"Weiss, Michael I." <Michael_I._Weiss@ceq.eop.gov>,Monica Medina <monica.medina@vmail5.nems.noaa.gov>,"Palm, Mary E." <Mary_E._Palm@ostp.eop.gov>,Usha Varanasi <Usha.Varanasi@noaa.gov>,"Davenport, Joanne Chow" <Joanne_Chow_Davenport@omb.eop.gov>,Bigler.Jeff@epamail.epa.gov, Linda Chaves <Linda.Chaves@noaa.gov>,"Barringer, Jody M." <Jody_M._Barringer@omb.eop.gov>,"Uhlenbrock, Kristan M." <Kristan_M._Uhlenbrock@ceq.eop.gov>,Engle.Virginia@epamail.epa.gov, "Bolger, Philip M" <Mike.Bolger@fda.hhs.gov>,"Fong, Tera L." <Tera_L._Fong@omb.eop.gov>, Washington.Evelyn@epa.gov,Ohanian.Edward@epamail.epa.gov,Evelyn Washington/DC/USEPA/US <Washington.Evelyn@epamail.epa.gov>,"Radosevich, Tara J." <Tara_J._Radosevich@ceq.eop.gov>,"Malhotra, Stefan" <Sanjay_S._Malhotra@ceq.eop.gov>, Schoeny.Rita@epa.gov,Kimani Kimbrough <Kimani.Kimbrough@noaa.gov>,"Koufopoulos, Peter N" <Peter.Koufopoulos@fda.hhs.gov>,"John E. Stein" <John.E.Stein@noaa.gov>,Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>,"McCarthy, Nell" <Nell_McCarthy@who.eop.gov>
2010_0526_Opening Protocol_NMFS FDA clean copy.doc

Attached please find the revised protocol.

5/26/2010

PROTOCOL FOR INTERPRETATION AND USE OF SENSORY TESTING AND ANALYTICAL CHEMISTRY RESULTS FOR RE-OPENING OIL-IMPACTED AREAS CLOSED TO SEAFOOD HARVESTING

INTRODUCTION

The U.S. Food and Drug Administration (FDA) operates a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, the Public Health Service Act and related regulations. Actions and criteria discussed in this protocol should be followed in addition to the provisions already in place. The National Oceanic and Atmospheric Administration (NOAA) administers the status of Federal waters for seafood harvest. After an oil spill has occurred, Federal and State agencies are faced with the issue of determining when the seafood from the previously contaminated area may once again be safe for harvest and human consumption. NOAA Office of Response and Restoration (OR&R) publication entitled *Managing Seafood Safety after an Oil Spill*[1] provides agencies guidance in such situations. This guidance and other input from both NOAA and the FDA have been used in consultation with the Environmental Protection Agency (EPA) to establish this protocol.

In establishing this protocol it is important to understand the following principles:

- NOAA and the FDA are working with other federal and state agencies to protect consumers from adulterated and unsafe seafood, while minimizing undue economic burden on any impacted seafood industries.

- Once oil or chemical contaminants are visually observed on the surface, it is recommended that the fishery be closed until free of sheen, and subsequent testing has been completed to confirm that seafood from affected areas are wholesome and safe for human consumption and use in animal feed.

- After the initial fishery closure, the best approach for determining the safety and acceptability of seafood from oil-contaminated areas is one that involves organoleptic analysis of products (i.e. sensory testing) followed by chemical analysis.

- In establishing the closure areas, NMFS has placed a buffer zone around known contaminated waters to make certain a wide enough closure is in place. Areas within this closure may be re-opened when as it is determined oil contamination did not occur and the area was closed only as a precautionary measure. This protocol does not apply to re-openings of this nature.

Oil contamination presents two kinds of risks: the presence of petroleum taint that renders seafood unfit for human consumption, and the presence of polycyclic aromatic hydrocarbons (PAHs) that are chemical hazards. Federal government and state agencies therefore close oil-contaminated harvest areas for health reasons.

Oil-contaminated seafood is adulterated if the contamination is perceivable by olfaction (taint), or in the absence of taint, chemical analysis determines that the level of PAHs in it exceeds FDA levels of concern. Consequently, after an oil spill, seafood suspected of oil contamination can only be brought into interstate commerce when it passes both sensory testing for petroleum taint, and chemical analysis for PAHs.

Document ID: 0.7.19.582.1

The purpose of this protocol is to specify how the results of sensory testing and chemical analyses will be used in re-opening seafood closure areas. The principles of the protocol are as follows:

Generally:

1. The closure of a fishery assumes a worst case scenario, and is intended to protect seafood consumers until the safety of the seafood can be established.
2. Area re-opening will be based on an acceptable reduction of the threat of seafood exposure to oil contamination, and analyses that assure the safety and wholesomeness of the seafood. Threat of exposure will be based on past observations and the status of the spill and conditions.
3. Once seafood samples from an area pass sensory testing, area samples must also pass chemical analysis for PAHs before that fishery may be reopened.

Specific Re-opening Criteria:

1. Threat of exposure – Threat of exposure is sufficiently reduced based on past observations of previous spills, any baseline information collected, and the status of the spill and conditions.
2. Evaluation of oil movement – Confirmation that the closure area is free of sheen on the surface by visual observation and/or aerial reconnaissance, or the presence of oil in the water column through visual observation or water testing.
3. Assessment of seafood contamination by sensory testing – Determine if the seafood is contaminated by tissue collection and sensory testing. The acceptable condition is that all specimens must pass sensory testing conducted by an NMFS-FDA sensory panel following the protocol reviewed by the FDA.
4. Assessment of seafood contamination by chemical analyses – Chemical analyses are performed on samples that pass sensory assessment to confirm that PAH concentrations are below the applicable FDA levels of concern for human health.
5. Opening boundaries will be based on results of analyses (sensory and chemical) that demonstrate the product is:
   a. Untainted.
   b. Safe for human consumption.
6. Establish buffer zones between open and closed areas using chemical and sensory testing indices.
7. Re-openings may be fisheries specific.

ANALYSIS

1. NMFS sensory testing protocol reviewed by FDA.[2,3]
2. When sensory tested samples are acceptable, verify sensory testing outcomes with chemical analyses performed using the NMFS PAH method.[4]

ONGOING STUDIES

Additional investigation protocols may continue to be designed to assess sediment contamination, ecological injury and other environmental parameters. These investigations are not directly related to or considered a part of this protocol. However, data from these

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investigations will be reviewed prior to making any decisions to reopen an area or a fishery and may be the basis for requiring additional sampling/analysis as per this protocol. For example, sediment chemical data from fishery areas may be used to identify contaminant "hot spots."

Water analysis for PAHs may be used to gain an understanding of the effectiveness of the containment and cleanup of the spill. In addition water analysis may be used to determine the concentration and effect of the dispersants used. Such water analysis may be performed on representative samples of the affected water column. The necessary sampling criteria will be based on many factors including the area of the closure, depth of the water within the closure, and sites and species considered for re-opening of harvest areas or fishery. With regard to inshore fisheries such as molluscan shellfish, sediment samples may also be analyzed.

Surveillance of fisheries should be conducted in response to identified "hot spots" or other relevant changes in environmental conditions (e.g., increases in PAH levels in water or seafood) if warranted, based on the protocol defined.

RE-OPENING PROCESS

NOAA and the FDA will review the data generated as a result of the implementation of this protocol, evaluate the accuracy and quality of the data and assess compliance with the agreed criteria. Based on this assessment, NMFS may re-open federal waters subject to the closure and FDA may approve the fishery for interstate commerce. NMFS and FDA will coordinate with State agencies for the re-opening of State commercial waters to ensure orderly and appropriately enforced re-openings. No partial re-openings will be allowed which are unenforceable, i.e., gear that requires harvesters to segregate their catch and discard catch from fisheries that remain closed.

Sensory testing based on NOAA Technical Memorandum NOS OR&R 9: *Guidance on Sensory Testing and Monitoring of Seafood for Presence of Petroleum Taint Following an Oil Spill*[2] will be utilized. A panel of ten expert assessors from NMFS and the FDA will conduct sensory testing. Samples will be examined by organoleptic methods both in the raw and cooked states. If a particular fishery passes sensory testing within a defined sampling area, chemical analyses will be performed on that particular fishery and area[4]. If the chemical analyses pass the risk based assessment criteria for the species in question, that zone will be considered for re-opening. If an area fails sensory testing it will be retested within a designated time period.

SELECTION OF TARGET PAHs and LEVELS OF CONCERN

Most petrochemical products such as diesel oil and crude oil contain aromatic components: mono-, bi-, and polycyclic aromatic hydrocarbons. Well-established liquid chromatography (LC)/fluorescence detection (FD) and gas chromatography (GC)/mass spectrometry (MS) methods are used to separate and quantify these contaminants in seafood.

PAHs are abundant in our environment; in addition to sources from petrochemical products they are generated by nearly all pyrolytic processes including forest fires, char-grilled and smoked meat, and fuel combustion in automobiles. Crude petroleum is composed of a complex mixture of many hundreds of compounds. Most of the compounds are volatile, and evaporate to produce the pungent odor of petroleum. Others are less volatile and persist in the environment (e.g. Formation of tar balls or sink to the bottom). The polycyclic aromatic hydrocarbons (PAHs) in petroleum mixtures are of greatest concern for human health because of their persistence (i.e.

Document ID: 0.7.19.582.1

Lower evaporation rates), and their potential for toxic or carcinogenic effects. The subset of 8 PAHs and their alkylated homologues (16) selected for critical analysis in the Deepwater Horizon Spill (Table I) are among the most studied PAHs in petroleum mixtures. These compounds have been found through experience with many previous oil spills (e.g. North Cape Oil Spill, 1996, Rhode Island) to reflect the potential for toxic or carcinogenic effects of the mixture of compounds present in crude petroleum[5].

Most seafood risk assessments conducted after oil spills in the U.S. have followed an approach used by the FDA in 1990 after the *Exxon Valdez* oil spill in Prince William Sound, Alaska[6,7]. This approach uses a set of calculations to determine finfish or shellfish (harvested for human consumption) PAH tissue concentrations, expressed in benzo[a]pyrene (BaP) equivalents (μg/kg), above which an appropriate risk level for cancer is exceeded. Non-cancer levels of concern are also evaluated. The values for several variables in these calculations can be adjusted on a case-by-case basis, depending on seafood consumption rates of the exposed population, average body weight of the exposed population, estimates of exposure time for a particular spill, and the cancer risk level deemed appropriate. This approach to calculating seafood advisory levels has since been used after several other oil spills, including the *North Cape* spill in Rhode Island, the *Julie N* spill in Maine, the *Kure* spill in California, and the *New Carissa* spill in Oregon.

The level of appropriate risk is the maximum level of individual lifetime carcinogenic risk that is considered appropriate by risk managers. The relative risk level used by FDA for low dose cancer risk calculations is 1×10^{-6}. This implies that exposure to PAH in seafood below a specified tissue concentration, at a defined consumption rate, and over a defined exposure period would yield a lifetime cancer risk of no greater than 1 in 1,000,000. A risk level of 1×10^{-6} was used in the risk calculations by FDA for the Exxon Valdez oil spill, as well as those done by the State of Rhode Island for the *North Cape* oil spill, the State of California for the *Kure* oil spill, and the State of Oregon for the *New Carissa* oil spill. Some states have considered higher risk levels, such as 1×10^{-5} (a lifetime cancer risk of no greater than 1 in 100,000) to be appropriate. For instance, a risk level of 1×10^{-5} was used in the risk assessment conducted by the State of Maine for the Julie N oil spill and the State of Alaska for the *Kuroshima* oil spill[1].

Depending upon levels of petrogenic PAHs accumulated by aquatic species, consumption of petroleum contaminated fishery products may pose a health risk to seafood consumers. The risk is exacerbated among those who are considered "high level" consumers of fishery products. These concerns necessitate consideration of consumption rates for high-level eaters of fish, shrimp, crab and shellfish in order to avoid errors inherent in extrapolating average per capita consumption values to distinct subpopulations. FDA uses the 90th percentile of national consumption data from the National Health and Nutrition Examination Survey (NHANES) for fish, shrimp, crab and shellfish for calculating risk of PAH exposure in high-level consumers of commercial seafood products.

Table I shows the criteria for re-opening based upon non-cancer risks and a 1×10^{-6} cancer risk for different PAHs. For the non-cancer evaluation (naphthalene, flourene and anthracene/phenanthracene) the EPA Integrated Risk Information System (IRIS) reference dose (RfD) values were used[8]. For the cancer evaluation (fluoranthene, pyrene, benz(a)anthracene, chrysene and benzo(a)pyrene), the EPA IRIS cancer slope factor values were used[9]. As discussed above, 90th percentile consumption values were used for generating calculations for

Document ID: 0.7.19.582.1

consumption of shrimp and crabs, oysters and finfish. For generating cancer risk values, exposures are assumed to last for 5 years.

Recent results from PAH chemical analysis of finfish (grouper, red snapper and red drum) collected by NOAA from the unaffected Dauphin Island area in early May show that PAH target levels shown in Table I are below detection limits (LOD <0.4 ppb). An evaluation of PAH chemical analysis data collected by the NOAA mussel watch program showed that in 2007-2008 average concentrations were below FDA levels of concern in oysters. Nevertheless, final determinations of opening status of oil spill affected fisheries and areas will take into consideration available PAH background level data, and assumptions on duration of exposure.

Criteria for Determining Sensory Testing Acceptability

A minimum of 6 sub-samples per species from each area under consideration is required. A sub-sample will consist of an individual organism for finfish and multiple organisms for shrimp and shellfish, depending on the intact animal type (e.g. 3 to 6 blue crabs, 6 oysters, 0.4 – 0.5 lb shrimp). The samples will be evaluated by a panel of a minimum of 10 expert assessors in the raw and cooked state.

For a closed fisheries area to be considered for reopening, all of the following tests must be performed (these criteria are based on past oil spill information and ensure a high confidence level that the seafood is not tainted by oil):

- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant odor from each raw sub-sample. If any sub-sample fails, the site fails.
- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant odor from each cooked meat sub-sample. If any sub-sample fails, the site fails.
- A minimum of seventy percent (70%) of the expert assessors must find NO detectable petroleum or dispersant taste (or flavor) in the cooked state. If any sub-sample fails, the site fails.
- In establishing the closure areas, NMFS has placed a buffer zone around known contaminated waters to make certain a wide enough closure is in place. Areas within this closure may be re-opened when as it is determined oil contamination did not occur and the area was closed only as a precautionary measure. This protocol does not apply to re-openings of this nature.

Sampling Criteria for Chemical Analyses

For crabs: Chemical analysis of edible muscle from a minimum of ten (10) individuals, of legal size if available, will be collected from each sampling site. Tissue samples from individual crabs will be combined to make separate composite samples of the muscle tissue and hepatopancreas. All crabs will be collected from sites selected as commonly used fishing grounds.

Document ID: 0.7.19.582.1

For all other seafood: Chemical analysis of a sample of edible tissue from a composite (of at least 200 grams) from a minimum of 10 or more individuals collected at or near the locations specified.

Table I

Criteria for Reopening Areas Closed from Oil Spills Based on Concentrations of Chemical Contaminants in Seafood

Chemical[1]	Levels of Concern (ppm) at a 10^{-6} cancer risk level			Basis[2]
	90 g/day (Shrimp and Crabs)	120 g'day (Oysters)	160 g/day (Finfish)	
Napthalene	31	23	20	Non-cancer EPA RfD; 70 kg bw
Flourene	31	23	20	Non-cancer EPA RfD; 70 kg bw
Anthracene/phenanthracene	233	175	150	Non-cancer EPA RfD; 70 kg bw
Fluoranthene	0.026	0.020	0.015	Cancer 0.02 B(a)P equivalency
Pyrene	0.041	0.031	0.025	Cancer 0.13B(a)P equivalency
Benz(a)anthracene	0.38	0.28	0.20	Cancer 0.014B(a)P equivalency
Chrysene	0.41	0.31	0.25	Cancer 0.013B(a)P equivalency
Benzo(a)pyrene	0.005	0.004	0.003	10^{-6} Cancer risk = (34ng/p/d)(70/5yr)[5]

[1] Includes alkylated homologues, specifically C-1, C-2, C-3, C-4 napthalenes; C-1, C-2, C-3 fuorenes; C-1, C-2, C-3 anthracenes/phenanthracenes; C-1, C-2 pyrenes .

[2]With respect to the Basis:

RfD based criteria:	**RfD**
Napthalene:	(0.04 mg/kg/d x 70kg)/Daily Intake (kg)
Fluorene:	(0.04 mg/kg/d x 70kg)/ Daily Intake (kg)
Anthracene:	(0.30 mg/kg/d x 70kg)/ Daily Intake (kg)

Alkylated homologues assumed to have similar toxicities to the parent compound. Anthracene and phenanthracene were combined because routine chemical analysis does not distinguish between the analogues of these two compounds.

Cancer risk-(q*)-based criteria:	**q^{*10}**
Fluoranthene:	[34ng x (70/5)]/[Daily Intake (g) x 0.02]
Pyrene:	[34ng x (70/5)]/[Daily Intake (g) x 0.13]
Benz(a)anthracene:	[34ng x (70/5)]/[Daily Intake (g) x 0.014]
Chrysene:	[34ng x (70/5)]/[Daily Intake (g) x 0.013]
Benzo(a)pyrene:	[34ng x (70/5)]/[Daily Intake (g)]

One-in-a-million increase in the lifetime upper bound cancer risk adjusted to account for exposures which are expected to last longer than 5 years (70/5 yr). For any sample containing fluoranthene, pyrene, benz(a)anthracene, chrysene, or benzo(a)pyrene, the sum of the individual ratios of the detected levels cannot exceed 1.

References:

1. Yender, R., Michel, J., and Lord, C. (2002). Managing Seafood Safety after an Oil Spill. Seattle: Hazardous Materials Response Division, Office of Response and Restoration, National Oceanic and Atmospheric Administration. 72 pp. Available: http://response.restoration.noaa.gov/book_shelf/963_seafood2.pdf

2. Reilly, T.I., and York, R.K. (2001) Guidance on sensory testing and monitoring of seafood for presence of petroleum taint following an oil spill. NOAA Technical Memorandum NOS OR&R 9. Seattle: Office of Response and Restoration, National Oceanic and Atmospheric Administration. 109 pp.

Document ID: 0.7.19.582.1

3. Yender, R. (2003). Improving Seafood Safety Management after an Oil Spill. In: *Proceedings of the 2003 International Oil Spill Conference*. 8 pp. Available: http://www.iosc.org/papers/IOSC%202003%20a416.pdf

4. Sloan, C.A., Brown, D.W., Pearce, R.W., Boyer, R.H., Bolton, J.L., Burrows, D.G., Herman, D.P., and Krahn, M.M. (2004). Extraction, Cleanup, and Gas Chromatography/Mass Spectrometry Analysis of Sediments and Tissues for Organic Contaminants. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-59, 47 pp.

5. Bolger, M. and Carrington, C. (1999). Hazard and risk assessment of crude oil in subsistence seafood samples from Prince William Sound: Lessons learned from the Exxon Valdez. In L. Jay Field et al. (eds.). *Evaluating and Communicating Subsistence Seafood Safety in a Cross-Cultural Context: Lessons Learned from the Exxon Valdez Oil Spill.* Pensacola: Society of Environmental Toxicology and Chemistry. Pp. 195-204.

6. Bolger, M., Henry, S.H., and Carrington, C.D. (1996). Hazard and risk assessment of crude oil contaminants in subsistence seafood samples from Prince William Sound. Proc. *EXXON VALDEZ Oil Spill Symposium,* S.D. Rice, R.B. Spies, D.A. Wolfe, and B.A. Wright (eds.). American Fisheries Symposium Vol. 18, pp. 837-843.

7. Bolger, M. and Carrington, C. (1999). Estimation of Risk Associated with consumption of Oil-Contaminated Fish and Shellfish by Alaskan Subsistence Fishermen using a Benzo[a]pyrene Equivalency Approach. In L. Jay Field et al. (eds.). *Evaluating and Communicating Subsistence Seafood Safety in a Cross-Cultural Context: Lessons Learned from the Exxon Valdez Oil Spill. Pensacola: Society of Environmental Toxicology and Chemistry. Appendix 3: Report of the Quantitative Risk Assessment Committee, Center for Food Safety and Applied Nutrition, U.S. food and Drug Administration,* 9 August 1990, pp. 295-304

8. The RfD value is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from a NOAEL, LOAEL or benchmark dose, with uncertainty factors generally applied to reflect limitations of the data used.

9. Slope factor values represent an upper bound, approximating a 95% confidence limit, on the increased cancer risk from a lifetime exposure to an agent. This estimate, usually expressed in units of proportion (of a population) affected per mg/kg-day, is generally reserved for use in the low-dose region of the dose-response relationship, that is, for exposures corresponding to risks less than 1 in 100.

10. US Environmental Protection Agency (USEPA). 2000. Guidance for assessing contaminant data for use in fish advisories, Volume 2: Risk assessment and fish consumption limits, Third Edition. EPA 823/B/00/008. Washington, DC: Office of Science and Technology, USEPA.

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Received(Date): Thu, 27 May 2010 15:08:41 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: Plume question
To: "Robert.Haddad" <Robert.Haddad@noaa.gov>
Cc: 'Beth Dieveney' <Beth.Dieveney@noaa.gov>,'_HQ Deep Water Horizon Staff' <dwh.staff@noaa.gov>,'Beth Lumsden' <Beth.Lumsden@noaa.gov>

Bob is correct, they have some flurometer readings to be corroberated with water samples that are coming shore side., They are willing to split them with us. We should get someone over there to get the splits tomorrow am when they land and get them into our certified lab.

Second, we need to get the coordinates of the stations and put them into our other cruise activities (e.g., GUNTER) to make shre this area is surveyed by acoustics and additional water sampling. Since we have no actual ppm readings this should be treated as potentially valuable not inconsistent data and make sure these results are integrated. NOAA's message is great, thanks for doing the cruise in partnership with us and we'll follow up by vectoring the GUNTER up there.

-Steve

Robert.Haddad wrote:

> All: This was a partnership cruise. As this is a fish closing question,
> Steve really needs to jump in. But, I believe that:
>
> (1) I believe that the current Federal fish closure covers this area
> (assuming they are talking about a plume measured 22 miles NE of the well
> head on a heading towards Mobile Bay).
> (2) We agree that the dispersed surface oil is having a deleterious impact
> on fish larvae (as well as plankton, eggs, etc. - things that are
> concentrated in the neuston layer - and this is one of the resource areas
> that is being closely assessed for spill-related injury.
> (3) I assume that the state's have closed their Nearshore Waters?
>
> As for the nature of the plume.
> (4) The article does not mention how the plume was detected or measured. We
> know they used a fluorometer - but are not sure how or if it was calibrated
> for petroleum. However, we shouldn't comment on the potential presence -
> yet alone the actual significance of such a plume, until we see what the
> water chemistry data say about unambiguously quantifiable hydrocarbon
> concentrations.
>
> (5) We plan to get splits of the water samples from the WEATHERBIRD as soon

as she makes port. Please let me know when/where to meet up with the
WEATHERBIRD and ensure that they have splits ready for us to off-load,

Bob

Robert Haddad, Ph.D.
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NOAA/Office of Response & Restoration
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-----Original Message-----
From: Beth Dieveney [mailto:Beth.Dieveney@noaa.gov]
Sent: Thursday, May 27, 2010 1:44 PM
To: Steve Murawski; Robert Haddad; _HQ Deep Water Horizon Staff
Cc: Beth Lumsden
Subject: Plume question

Steve and Bob~

See the below article. This is the article that has generated the task for
determining if the statements about the plume are accurate.
We have also been asked by Dr. Lubchenco if we should develop a statement
especially in relation to fish closures.

Please provide information as you can.

Regards,
Beth

From: Kathryn Tolbert
Sent: 05/27/2010 01:02 PM EDT
To: David Fahrenthold
Cc: Juliet Eilperin; oilspill@washpost.com
Subject: plume -- dave pls make calls

APNewsBreak: New, giant sea oil plume seen in Gulf
BC-US--OilSpill-NewPlume,1stLd-Writethru
Eds: ADDS details of plume and its possible environmental effects,
quotes.
APNewsBreak: New, giant sea oil plume seen in Gulf
JASON DEAREN
MATTHEW BROWN
Associated Press Writers
NEW ORLEANS (AP) - Marine scientists have discovered a massive new

plume of what they believe to be oil deep beneath the Gulf of Mexico, stretching 22 miles from the leaking wellhead northeast toward Mobile Bay, Alabama.

The discovery by researchers on the University of South Florida College of Marine Science's Weatherbird II vessel is the second significant undersea plume recorded since the Deepwater Horizon exploded on April 20.

The thick plume was detected just beneath the surface down to about 3,300 feet, and is more than 6 miles wide, said David Hollander, associate professor of chemical oceanography at the school.

Hollander said the team detected the thickest amount of hydrocarbons, likely from the oil spewing from the blown out well, at about 1,300 feet in the same spot on two separate days this week.

The discovery was important, he said, because it confirmed that the substance found in the water was not naturally occurring and that the plume was at its highest concentration in deeper waters. The researchers will use further testing to determine whether the hydrocarbons they found are the result of dispersants or the emulsification of oil as it traveled away from the well.

The first such plume detected by scientists stretched from the well southwest toward the open sea, but this new undersea oil cloud is headed miles inland into shallower waters where many fish and other species reproduce.

The researchers say they are worried these undersea plumes may are the result of the unprecedented use of chemical dispersants to break up the oil a mile undersea at the site of the leak.

Hollander said the oil they detected has dissolved into the water, and is no longer visible, leading to fears from researchers that the toxicity from the oil and dispersants could pose a big danger to fish larvae and filter feeders such as sperm whales.

"There are two elements to it," Hollander said. "The plume reaching waters on the continental shelf could have a toxic effect, and we also may see a long term response as it cascades up the food web."

Received(Date): Thu, 27 May 2010 17:31:25 -0400
From: Tim Gallagher <timothy.gallagher@noaa.gov>
Subject: Response Operations Afternoon Update
To: dwh.staff@noaa.gov
Cc: "william.conner" <William.Conner@noaa.gov>, Ken Barton <Ken.Barton@noaa.gov>
Response Operations DWH-MC252 Afternoon Update - 27May10.doc

Good Afternoon,

Please find attached the afternoon update for the Response Operations Group. Also attached are the Marsh Cleanup & Subsurface Oil 1-Pagers (not cleared for release). Please let me know if you have any questions or require additional information.

V/r,
Tim

LCDR Timothy J. Gallagher, NOAA
XO, Emergency Response Division
NOS Office of Response & Restoration
Tel: (301) 713-2989 x109

Oil Spill Response in Coastal Marshes

Because coastal marshes are biologically productive, ecologically important, and highly sensitive to oiling, they receive high priority for protection during oil spills. When protection fails and marshes are oiled, decision-makers must address the advantages and disadvantages of oil spill cleanup in these sensitive habitats. Past studies show that while appropriate cleanup methods can enhance marsh recovery, the wrong cleanup measures can further damage oiled marshes. Less clearly delineated are conditions when cleanup of an oiled marsh is the right approach, what methods are best to employ, and when cleanup ceases to be useful.

Cleanup decision-making

To determine whether cleanup is the right choice, decision-makers must assess the severity and nature of the damage (using field surveying), and they must estimate the time it will take for the marsh to recover in the absence of cleanup (typically considering short-term recovery to be from 1 to 3 years, medium-term from 3 to 5 years, and long-term more than 5 years). Documented recovery times for oiled marshes range from a few weeks to decades. History suggests that more lightly oiled marshes in warmer locations such as the Gulf of Mexico will recover more quickly on their own than heavily oiled marshes, especially those in colder environments.

To an ecologist, "recovery" doesn't mean a return to the precise conditions that preceded the oil spill, because natural systems constantly change in response to changes in environmental conditions. When a recovering marsh comes to resemble similar, unoiled marshes in important ecological parameters, it is considered recovered.

Table 1. Advantages and disadvantages of cleanup techniques used in marshes.

Method	Advantages	Disadvantages
No Response (natural degradation of the oil)	Minimal impact, avoids physical impact from workers	Potential oiling of birds or wildlife; oil may impact adjacent areas; heavy oils may degrade slowly or form asphalt pavements
Vacuuming/pumping	Can remove large quantities of oil	Difficult to bring equipment into marsh; physical impacts may be considerable
Low pressure flushing (with water)	Can assist in oil removal by "herding" oil to collection points (can be used with vacuuming/pumping); lifts oil off sediment surface (when marsh is not flooded)	Pressure must be carefully controlled; must be carefully monitored; can cause physical impacts
Controlled burning	Can remove oil quickly; can minimize impacts from trampling	May damage plant roots and rhizomes, slowing recovery; creates air pollution; regulatory concerns; potential impacts not fully understood
Sediment removal/replanting	For heavily oiled sediment, may be the only possible method	May increase erosion potential; replanting required; change in substrate elevation may impede plant regrowth
Cutting of oiled vegetation	Leaves most of plant intact; reduces oiling of birds	Overcutting may kill plants; may increase erosion; must be carefully monitored
Bioremediation	Great theoretical potential; low impact	Little understood, few case studies; oxygen may be limiting; potential for nutrient enrichment

Document ID: 0.7.19.1024

Subsurface Movement of Deepwater Horizon MC252 Oil

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- Average subsurface oil concentrations will be in the parts-per-million (ppm) range within a few kilometers of the wellhead, and will decrease to sub-ppm levels beyond tens of kilometers from the source.
- There can be parcels of water, even at long distances from the source, that contain oil concentrations much higher than average because oil droplets do not mix uniformly into the water column.
- Subsurface oil droplets will not coalesce and create higher oil concentrations in a coherent plume.
- Physical, chemical, and biological processes will continue to reduce water column oil concentrations over time.

The Deepwater Horizon is releasing methane gas and oil in a turbulent mixture from the broken riser pipe attached to the well. A plume of oil and gas rises from the release point with most oil reaching the surface in about three hours. During the trip to the surface some of the oil dissolves in the water column and some forms droplets. Deepwater Horizon MC2523 oil has a density about 85 - 90% of that of water, making it buoyant. When it reaches the water surface, the oil floats. The pressure propelling the oil out of the wellhead is strong enough that it can cause at least some of the oil to form water-in-oil emulsion, or mousse. While mousse is denser than the oil, it is less dense than the water, and so it too naturally rises to the surface.

Dispersing oil at depth, either naturally or chemically, has the effect of breaking up the oil into small droplets within the water column. Dispersed droplets vary in size, and droplets of different sizes take different lengths of time to rise to the water surface. Very small droplets, less than about 100 microns in diameter, rise to the surface so slowly that background ocean turbulence is strong enough to keep them mixed within the water column for months. These very small droplets behave as if they were neutrally buoyant, and remain at depth.

Document ID: 0.7.19.1024

Response Operations Afternoon Report

NRT Level Updates

- Nothing to report

NIC Activities

1. USACE Berm Permit - USACE approved a permit to build protective berms based on a modified proposal from LA. The 35 previously identified conditions were included in the permit. The NIC IASG is looking at identifying performance criteria for the prototype berm. Here is a section from the press Release -

After careful consideration of the available information, and working closely with the state of Louisiana, the coastal parishes, and our federal partners, I have offered the permit under Emergency Permit NOD-20, with special conditions, authorizing the state to proceed with six reaches, E3 and E4 to the east of the Mississippi River, and W8, W9, W10, and W11 to the west," said Col. Al Lee, commander of the New Orleans District, U.S. Army Corps of Engineers. "These areas have been identified as critical locations where greater immediate benefit is likely to be achieved with minimal adverse disruption of coastal circulation patterns."

2. FRTG - The preliminary flow rate estimates were reported by the FRTG today. The Plume Model (12,000 - 25,000 bbls/day) and the Mass Balance (12,000 - 19,000 bbls/day) groups provided their initial estimates. ADM Allen mentioned this on the Governor's call this morning.

3. General Information Requests - Marsh burns - Seattle provided a previously prepared document that was shared with the NIC (please see attached).

4. The ERMA team has been situated within the NIC Situation Unit and connected to a projection screen where they can display information for a Situational Awareness/Common Operational Picture. They prepared six maps for CAPT Beeson, Chief of Staff, for use in briefing Secretary Napolitano. In addition the NIC Inter Agency Solutions Group was briefed on ERMA.

5. NIC staff participated in weekly CEQ-sponsored Gulf Outreach Call with environmental NGOs. Issues raised by callers of interest to NOAA: availabiltiy of seafood testing data and lack of opportunity for public comment on emergency COE permit for LA sand berm. Follow-up at next environmental outreach interagency group call 6/2.

Document ID: 0.7.19.1024.1

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Document ID: 0.7.19.1024.2

Table 2. Factors to consider when evaluating whether marsh impacts are likely to be short term (1 – 3 years) or longer term.

Evaluation Factors	Examples
Severity of impact:	
Oil persistence and toxicity	Oil type; surface area covered, thickness; percent of plant oiled
Oil penetration into sediment	Substrate type, coarseness; oil viscosity
Type of marsh vegetation	Sensitivity of plants (annuals, perennials)
Season of impact	Growing season vs. dormant season
Oil residence time in absence of cleanup:	
Weathering	Exposure, tidal flushing, precipitation
Biodegradation potential	Oil type; temperature/climate; previous exposure to oiling
Ability of marsh to self-recover:	
Sedimentation over oiled layer	Deposition rate
Recolonization	Distance to intact adult plants, plant's reproductive strategy
Elevation	Suitability of location for species (ideal or marginal?)
Environmental stresses	Abnormal weather, heavy rainfall, cold temperatures, drought
Other cleanup concerns:	
Use of site (over short and long term)	Human users, ecological users
Species of special concern	Migrants, endangered species
Impacts to adjacent areas	Mobility of remaining oil, sensitivity of adjacent habitats

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Document ID: 0.7.19.1024.3

Chemical dispersants have been injected into the oil as it is released from the riser to increase subsurface dispersion. Injecting chemical dispersants into the oil jet at the sea floor is likely to increase the percentage of oil forming droplets small enough to be neutrally buoyant. The neutrally buoyant oil droplets dispersed at the well are being released into ocean waters below the pycnocline[1]. Preliminary observations and model results indicate that this dispersed oil will be at found at higher concentrations between about 1000 and 1400 meters deep as it moves away from the release site.

As the mean current moves the deep water and dispersed oil away from the release site, processes of entrainment and mixing acts to dilute oil droplets. The resulting narrow plumes of small oil droplets will move with slow deep-water currents less than 3 miles in a day. As the droplets move they spread laterally under the influence of the deep-water turbulence. The larger droplets drift upward away from the smaller droplets. In a month the plume of droplets could travel 90 miles, spreading both horizontally and vertically. During this time oil droplets can be degraded by natural processes and swept out of the water column by mineral and organic particles in the water. This will result in some oil settling out on bottom sediments.

Beyond 90 miles we estimate that the highest concentration of oil droplets in a plume will be less than 1 ppm. Unlike surface oil that can become dense slicks at shorelines and in convergence zones, oil droplets in the deep water cannot coalesce into a continuous film. There is no mechanism that can reverse the natural process of diffusion that causes droplets to spread further and further apart as they travel in deep waters.

[1] The pycnocline is a region in the ocean where water density increases relatively rapidly with depth. It has the effect of retarding movement of fluids from below to above, or vice versa.

Document ID: 0.7.19.1024.3

Received(Date): Thu, 27 May 2010 17:53:49 -0400
From: Sally Yozell <Sally.Yozell@noaa.gov>
Subject: RE: Pre-brief at 9:05 on Friday
To: Linda belton <Linda.Belton@noaa.gov>,"dwh.staff@noaa.gov" <dwh.staff@noaa.gov>,'Monica Medina' <Monica.Medina@noaa.gov>,'David Kennedy' <David.Kennedy@noaa.gov>,'Margaret Spring' <Margaret.Spring@noaa.gov>,"'Gray, John'" <John.Gray@noaa.gov>, 'Sally Yozell' <Sally.Yozell@noaa.gov>
Cc: "Jen.Pizza@noaa.gov" <Jen.Pizza@noaa.gov>,"'Jacqueline J. Rousseau'" <Jacqueline.J.Rousseau@noaa.gov>

I will be away but am happy to pick up Saturday or Monday if you need me and assuming I have cell connection…

Sally Yozell

Director of Policy

DOC/NOAA

202-482-3567

From: Linda belton [mailto:Linda.Belton@noaa.gov]
Sent: Thursday, May 27, 2010 5:38 PM
To: dwh.staff@noaa.gov; 'Monica Medina'; 'David Kennedy'; 'Margaret Spring'; 'Gray, John'; 'Sally Yozell'
Cc: Jen.Pizza@noaa.gov; 'Jacqueline J. Rousseau'
Subject: FW: Pre-brief at 9:05 on Friday

- As I said, they are going back to the regular format and hope that they will not forget us this time.
- Monica, are you still on for tomorrow? And, David Kennedy?
- Also, Shaun was informed by Valerie Jarrett the calls will take place this weekend and on Monday. Please let me know if you are available for this weekend, Monday and Tuesday.

From: McGrath, Shaun L. [mailto:Shaun_L._McGrath@who.eop.gov]
Sent: Thursday, May 27, 2010 5:29 PM
To: McGrath, Shaun L.; Belton, Linda; Monica Medina; heather.smith1@dhs.gov; Tennyson, Stephanie L; Pallone.Sarah@epamail.epa.gov; Lori_Faeth; Kayyem, Juliette; Murk, David CDR; Moilanen, Stephen S.; Mark.G.Moland@uscg.mil
Subject: Pre-brief at 9:05 on Friday

All,

Draft agenda for the pre-call tomorrow is below. Please let me know if there are any changes.

Friday, May 28 Call with Governors

9:05 a.m. pre-brief; 9:15 Governors

[redacted] b6

[redacted] b6

[redacted] b6

Please let me know if there are any changes to the speakers below. Also, please be prepared to cover the action items that came up on yesterday's call.

DRAFT AGENDA

· Opening remarks (Valerie Jarrett)

· Observations and Trajectory – **Monica Medina and David Kennedy, Medina, NOAA**

o NOAA will provide the latest observations and trajectories

· Situation &Leak Stabilization Update – **RADM Peter Neffenger, NIC**

o Latest information from National Incident Command, including current status of efforts to stabilize the leaks.

o Adm. Allen – Told Gov. Jindal he will have a decision on the berm/barrier proposal today.

o Adm. Allen – the flow rate task force will release their initial estimates of the flow rates today.

o Neffenger – Discussed the boom deployment: [The message here is a positive one for us – we are doing everything that Jindal has been criticizing us about. We should continue to push back aggressively on Jindal and Nungesser.]

o Neffenger – traveling today to the different parishes and will introduce the Presidents to their Coast Guard liaison.

· Operations Report – **RADM Mary Landry, UAC**

o Response Plans and Boom

o Jindal – Governor said the boom information was welcome news. He did note that Capt. Lafarrier (sp?) said we didn't have the resources or people to get the job done. (Neffenger said that things have changed dramatically in the last 24 hours, and will continue to change)

o Landry – BP bringing in senior staff to replace contractors who were not making decisions quickly enough on boom.

o Landry – discussed the recall of the vessels of opportunity due to discomfort reported by 9 crew members.

· EPA Update – **EPA Dep Admin Bob Perciasepe**

o EPA – Bob P. said we would get the talking points on dispersants out to the Governors today.

· Interior Update – **Tom Strickland**

· Open discussion and Q&A with Governors and state officials

· Next call – 9:15 a.m. EDT (8:15 CDT) Saturday, May 29, 2010

Other issues raised:

· Jindal – 2 issues on claims:

o BP is saying that no claims have been denied, which is true, but belies the fact that there are many "open" claims for which a decision has not been reached. Gov would like us to push BP to make decisions on those claims. He would also like to understand the BP appeals process for when claims are denied.

o Local governments are starting to run into cash flow issues. The original BP grants to cities have been very helpful, but they are starting to run out. Governor would like to see BP make lines of credit available to parishes. Admiral Landry said she would discuss it with Doug Suttles at BP.

Received(Date): Fri, 28 May 2010 07:11:23 -0400
From: "Siger, Rick" <RSiger@doc.gov>
Subject: RE: Corexit - The Eagle has landed!
To: "Murawski, Steve" <Steve.Murawski@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"Beaverson, Chris" <Chris.Beaverson@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>,"Varanasi, Usha" <Usha.Varanasi@noaa.gov>,"Garrett, Spencer" <Spencer.Garrett@noaa.gov>,"Dickhoff, Walton" <Walton.W.Dickhoff@noaa.gov>
Cc: "Sarri, Kristen" <KSarri@doc.gov>

Adding Kris Sarri who has been working this issue from DOC.

From: Steve Murawski [Steve.Murawski@noaa.gov]
Sent: Thursday, May 27, 2010 11:15 PM
To: Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Siger, Rick; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

-------- Original Message --------

Subject: Re: Fwd: [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
Date: Thu, 27 May 2010 20:08:29 -0700
From: Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To: Steve Murawski <Steve.Murawski@noaa.gov>
CC: Nicolle.R.Rutherford@noaa.gov, timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm" <Dave.Westerholm@noaa.gov>, "william.conner" <William.Conner@noaa.gov>
References: <f669378a2f297e23.4bfebc8b@noaa.gov> <4BFF3280.9080907@noaa.gov> <4BFF3325.2090402@noaa.gov>

Hi Steve,

If I understand the email chain here, Walt says that he is covered.

gs

Steve Murawski wrote:

> Gary,
>
> Is part of this going to Seattle to Usha and Walt D.?
>
> thanks
>
> Steve
>
> Gary Shigenaka wrote:
>> Nicolle,
>>
>> I'm very glad that the "missing" Corexit samples were found safely in
>> possession of the intended recipients. I'm also glad that you let me
>> know, since we had a meeting in the command post last night on this
>> subject and would have been diverted on a tangent had you not clued
>> us in! I believe Greg Baker has also been in contact with the NMFS
>> folks and can be the POC for future inquiries.
>>
>> Thanks again for shepherding the shipment. Now go home and get some
>> rest.
>>
>> gs
>>
>> Nicolle.R.Rutherford@noaa.gov wrote:
>>> They found them.
>>>
>>> Nicolle
>>>
>>> ---
>>>
>>>
>>> Subject:
>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
>>> From:
>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>> Date:
>>> Thu, 27 May 2010 14:04:33 -0500
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>>
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>> CC:
>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson
>>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse <Lisa.Desfosse@noaa.gov>,
>>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple
>>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter
>>> <Cheryl.Lassitter@noaa.gov>, Emille Cole <Emille.Cole@noaa.gov>,
>>> Nicolle R Rutherford usha <Nicolle.R.Rutherford@noaa.gov>, Walton
>>> Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>>
>>>
>>> John et al-- the dispersant's have been received by NSIL with the
>>> sealed container intact --the products are in good condition --and--
>>> the Chain Of Custody (COC) documents being in correct order--the
>>> samples have been entered into our Laboratory COC process and is
>>> being held appropriately in a locked cabinet within a locked room--

>>> the volume meets our needs--thanks for all of the help you have
>>> given us in procuring these samples--Regards--Spencer
>>>
>>> -------- Original Message --------
>>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
>>> Request]]
>>> Date: Thu, 27 May 2010 11:04:39 -0700
>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>> To: Calvin Walker <Calvin.Walker@noaa.gov>
>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>,
>>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>
>>> References: <007501cafdc4$7c582810$75087830$%Wilson@noaa.gov>
>>> <4BFEB12C.3080007@noaa.gov>
>>>
>>>
>>>
>>> Calvin:
>>> John Rapp just called me about this, so I think we are squared
>>> away. Thanks -Walt
>>>
>>> On 5/27/10 10:51 AM, Calvin Walker wrote:
>>>> NWFSC will also need analytical reference stds, some for analytical
>>>> methods development, and for toxicity studies.
>>>>
>>>> Walt---how much is needed?
>>>>
>>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:
>>>>>
>>>>> We need to make sure we have reference vials for the State
>>>>> training in sensory as well as to use for spiking samples if
>>>>> necessary. 2L should suffice but please ask Bobby to be sure.
>>>>>
>>>>>
>>>>>
>>>>> Steven
>>>>>>>>>>>
>>>>>
>>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]
>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM
>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov
>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]
>>>>>
>>>>>
>>>>>
>>>>> Please respond ASAP or by 2 PM (Eastern).
>>>>> -------- Original Message --------
>>>>>
>>>>> *Subject: *
>>>>>
>>>>>
>>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>>
>>>>> *Date: *
>>>>>
>>>>>
>>>>> Thu, 27 May 2010 13:09:45 -0400
>>>>>

>>>>> *From: *
>>>>>
>>>>>
>>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>>
>>>>> *To: *
>>>>>
>>>>>
>>>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>>
>>>>> *CC: *
>>>>>
>>>>>
>>>>> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Nancy.Thompson@noaa.gov
>>>>> <mailto:Nancy.Thompson@noaa.gov>, CalvinWalker@noaa.gov
>>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaagov>, LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>,
>>>>> Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>,
>>>>> Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>,
>>>>> James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>,
>>>>> Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>,
>>>>> David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>,
>>>>> timothy.gallagher@noaa.gov <mailto:timothy.gallagher@noaa.gov>
>>>>>
>>>>> *References: *
>>>>>
>>>>>
>>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <4BFE7A04.3010503@noaa.gov> <mailto:4BFE7A04.3010503@noaa.gov>
>>>>> <f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <mailto:f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <4BFEA61C.2080802@noaa.gov> <mailto:4BFEA61C.2080802@noaa.gov>
>>>>>
>>>>>
>>>>>
>>>>> Spencer,
>>>>>
>>>>> Since you have received 2 L of each dispersant, is that a
>>>>> sufficient volume to do all planned work for seafood safety? DOC,
>>>>> in particular, wants to know the exact needs of your lab so
>>>>> testing proceeds with all necessary resources. Further, the USG
>>>>> overall is looking for assurance that there will be no lags in
>>>>> implementation, so I again ask for input on what's needed to keep
>>>>> this ball rolling. Thanks,
>>>>> John
>>>>>
>>>>> Spencer Garrett wrote:
>>>>> > Thanks for the info--Emille please track down--esg
>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:
>>>>> >> Package was delivered Tuesday, 25 May 2010 at 10:08 am. It was
>>>>> >> signed for by C. Bergman.
>>>>> >> Nicolle

>>>>> >> >> >> >> >> ----- Original Message -----
>>>>> >> From: Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>> >> Date: Thursday, May 27, 2010 6:54 am
>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >> To: Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> >> Cc: Calvin.Walker@noaa.gov <mailto:Calvin.Walker@noaa.gov>,
>>>>> Emille Cole <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>,
>>>>> >> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaagov>, >> LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>
>>>>> >> >> >> >>> not to my knowledge having it checked now--Nicolle
>>>>> pls verify FEDEX >>> tracking #'s--Regards--Spencer
>>>>> >>> >>> Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:
>>>>> >>>   >>>> do we have this? >>>>
>>>>> ---
>>>>> >>>> >>>> >>>> Subject:
>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >>>> From:
>>>>> >>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>> >>>> Date:
>>>>> >>>> Thu, 27 May 2010 06:57:47 -0400
>>>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> >>>> Corexit was shipped Monday. Since Dr. Garrett
>>>>> hasn't received it, >>>>   >>> has   >>>> he followed up with
>>>>> niccole. Seems like we should be able to track >>>>   >>>
>>>>> the   >>>> package.
>>>>> >>>> >>>> John
>>>>> >>>> >>>> >>>> Begin forwarded message:
>>>>> >>>> >>>>   >>>>> *From:* "Nicolle.R.Rutherford"
>>>>> <Nicolle.R.Rutherford@noaa.gov
>>>>> >>>> <mailto:Nicolle.R.Rutherford@noaa.gov> <>>
>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT
>>>>> >>>>> *To:* Mary Gill <Mary.Gill@noaa.gov
>>>>> >>>> <mailto:Mary.Gill@noaa.gov> <>>
>>>>> >>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
>>>>> >>>> <mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>>
>>>>> <Randy.J.Tebeest@noaa.gov <mailto:RandyJ.Tebeest@noaa.gov> <>>,
>>>>> Jordan Stout <Jordan.Stout@noaa.gov <mailto:Jordan.Stout@noaa.gov>
>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine
>>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave
>>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov
>>>>> >>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>>
>>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>, John
>>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>, >>>>>
>>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy
>>>>> Gallagher >>>>> <timothy.gallagher@noaa.gov
>>>>> >>>> <mailto:timothy.gallagher@noaa.gov> <>>

>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
>>>>> >>>>> >>>>> Hi Mary,
>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527 was
>>>>> made by >>>>> NMFS through Tim Gallagher and was acted on
>>>>> two days ago. >>>>> See below. I have not received confirmation
>>>>> from Dr. Garrett that >>>>> the samples were received,
>>>>> although the samples should >>>>> have been >>>
>>>>> received >>>>> yesterday. The request was for only two liters
>>>>> of each of the >>>>> dispersants, not four.
>>>>> >>>>> >>>>> Nicolle
>>>>> >>>>> >>>>> -------- Original Message --------
>>>>> >>>>> Subject: Re: Corexit 9500 & 9527 Request
>>>>> >>>>> Date: Mon, 24 May 2010 14:43:44 -0700
>>>>> >>>>> From: Nicolle.R.Rutherford
>>>>> <nicolle.r.rutherford@noaa.gov
>>>>> <mailto:nicolle.r.rutherford@noaa.gov> <>>
>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov
>>>>> <mailto:Spencer.Garrett@noaa.gov> <>>
>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov
>>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka
>>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov> <>>
>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov
>>>>> <mailto:4BF5B114.9010405@noaa.gov> <>>
>>>>> >>>>> >>>>> >>>>> >>>>> Hello Dr. Garrett,
>>>>> >>>>> I just FedExed a cooler containing two liters each of
>>>>> Corexit 9500 >>>>> >>> and >>>>> 9527 to you for use as
>>>>> part of the sensory analysis program. The >>>>> >>>
>>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives,
>>>>> please confirm >>>>> >>> that >>>>> you have received it.
>>>>> >>>>> >>>>> If you have any questions or concerns, please don't
>>>>> hesitate to >>>>> >>> call or >>>>> email.
>>>>> >>>>> >>>>> Cheers,
>>>>> >>>>> Nicolle Rutherford
>>>>> >>>>> Biologist
>>>>> >>>>> Emergency Response Division
>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)
>>>>> >>>>> 206-300-2994
>>>>> >>>>> >>>>>> >>>>>
>>

Received(Date): Fri, 28 May 2010 07:29:04 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: Re: Corexit - The Eagle has landed!
To: "Siger, Rick" <RSiger@doc.gov>,"Murawski, Steve" <Steve.Murawski@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"Beaverson, Chris" <Chris.Beaverson@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>,"Varanasi, Usha" <Usha.Varanasi@noaa.gov>,"Garrett, Spencer" <Spencer.Garrett@noaa.gov>,"Dickhoff, Walton" <Walton.W.Dickhoff@noaa.gov>

Thanks Rick.

Is 2 liters enough for the work that Seattle and Pascagoula have to do? I thought we needed more. Please confirm and please make sure you are being extra prepared. Also, if we are talking about working with university partners then do they need samples? Thanks.

From: Siger, Rick
To: Murawski, Steve; Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Cc: Sarri, Kristen
Sent: Fri May 28 07:11:23 2010
Subject: RE: Corexit - The Eagle has landed!

Adding Kris Sarri who has been working this issue from DOC.

From: Steve Murawski [Steve.Murawski@noaa.gov]
Sent: Thursday, May 27, 2010 11:15 PM
To: Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Siger, Rick; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

-------- Original Message --------

Subject: Re: Fwd: [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
Date: Thu, 27 May 2010 20:08:29 -0700
From: Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To: Steve Murawski <Steve.Murawski@noaa.gov>
CC: Nicolle.R.Rutherford@noaa.gov, timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm"

<Dave.Westerholm@noaa.gov>,
"william.conner" <William.Conner@noaa.gov>
References: <f669378a2f297e23.4bfebc8b@noaa.gov>
<4BFF3280.9080907@noaa.gov>
<4BFF3325.2090402@noaa.gov>

Hi Steve,

If I understand the email chain here, Walt says that he is covered.

gs

Steve Murawski wrote:
> Gary,
>
> Is part of this going to Seattle to Usha and Walt D.?
>
> thanks
>
> Steve
>
> Gary Shigenaka wrote:
>> Nicolle,
>>
>> I'm very glad that the "missing" Corexit samples were found safely in
>> possession of the intended recipients. I'm also glad that you let me
>> know, since we had a meeting in the command post last night on this
>> subject and would have been diverted on a tangent had you not clued
>> us in! I believe Greg Baker has also been in contact with the NMFS
>> folks and can be the POC for future inquiries.
>>
>> Thanks again for shepherding the shipment. Now go home and get some
>> rest.
>>
>> gs
>>
>> Nicolle.R.Rutherford@noaa.gov wrote:
>>> They found them.
>>>
>>> Nicolle
>>>
>>> --
>>>
>>>
>>> Subject:
>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
>>> From:
>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>> Date:
>>> Thu, 27 May 2010 14:04:33 -0500
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>>
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>

>>> CC:
>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson
>>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse <Lisa.Desfosse@noaa.gov>,
>>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple
>>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter
>>> <Cheryl.Lassitter@noaa.gov>, Emille Cole <Emille.Cole@noaa.gov>,
>>> Nicolle R Rutherford usha <Nicolle.R.Rutherford@noaa.gov>, Walton
>>> Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>>
>>>
>>> John et al-- the dispersant's have been received by NSIL with the
>>> sealed container intact --the products are in good condition --and--
>>> the Chain Of Custody (COC) documents being in correct order--the
>>> samples have been entered into our Laboratory COC process and is
>>> being held appropriately in a locked cabinet within a locked room--
>>> the volume meets our needs--thanks for all of the help you have
>>> given us in procuring these samples--Regards--Spencer
>>>
>>> -------- Original Message --------
>>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
>>> Request]]
>>> Date: Thu, 27 May 2010 11:04:39 -0700
>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>> To: Calvin Walker <Calvin.Walker@noaa.gov>
>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>,
>>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>
>>> References: <007501cafdc4$7c582810$75087830$%Wilson@noaa.gov>
>>> <4BFEB12C.3080007@noaa.gov>
>>>
>>>
>>>
>>> Calvin:
>>> John Rapp just called me about this, so I think we are squared
>>> away. Thanks -Walt
>>>
>>> On 5/27/10 10:51 AM, Calvin Walker wrote:
>>>> NWFSC will also need analytical reference stds, some for analytical
>>>> methods development, and for toxicity studies.
>>>>
>>>> Walt---how much is needed?
>>>>
>>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:
>>>>>
>>>>> We need to make sure we have reference vials for the State
>>>>> training in sensory as well as to use for spiking samples if
>>>>> necessary. 2L should suffice but please ask Bobby to be sure.
>>>>>
>>>>>
>>>>>
>>>>> Steven
>>>>>
>>>>>
>>>>>
>>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]
>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM
>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov
>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]

>>>>>
>>>>>
>>>>>
>>>>> Please respond ASAP or by 2 PM (Eastern).
>>>>> -------- Original Message --------
>>>>>
>>>>> *Subject: *
>>>>>
>>>>>
>>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>>
>>>>> *Date: *
>>>>>
>>>>>
>>>>> Thu, 27 May 2010 13:09:45 -0400
>>>>>
>>>>> *From: *
>>>>>
>>>>>
>>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>>
>>>>> *To: *
>>>>>
>>>>>
>>>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>>
>>>>> *CC: *
>>>>>
>>>>>
>>>>> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Nancy.Thompson@noaa.gov
>>>>> <mailto:Nancy.Thompson@noaa.gov>, Calvin.Walker@noaa.gov
>>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>,
>>>>> Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>,
>>>>> Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>,
>>>>> James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>,
>>>>> Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>,
>>>>> David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>,
>>>>> timothy.gallagher@noaa.gov <mailto:timothy.gallagher@noaa.gov>
>>>>>
>>>>> *References: *
>>>>>
>>>>>
>>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <4BFE7A04.3010503@noaa.gov> <mailto:4BFE7A04.3010503@noaa.gov>
>>>>> <f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <mailto:f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <4BFEA61C.2080802@noaa.gov> <mailto:4BFEA61C.2080802@noaa.gov>
>>>>>
>>>>>
>>>>>
>>>>> Spencer,
>>>>>

>>>>> Since you have received 2 L of each dispersant, is that a
>>>>> sufficient volume to do all planned work for seafood safety? DOC,
>>>>> in particular, wants to know the exact needs of your lab so
>>>>> testing proceeds with all necessary resources. Further, the USG
>>>>> overall is looking for assurance that there will be no lags in
>>>>> implementation, so I again ask for input on what's needed to keep
>>>>> this ball rolling. Thanks,
>>>>> John
>>>>>
>>>>> Spencer Garrett wrote:
>>>>> > Thanks for the info--Emille please track down--esg
>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:
>>>>> >> Package was delivered Tuesday, 25 May 2010 at 10:08 am. It was
>>>>> >> signed for by C. Bergman.
>>>>> >> Nicolle
>>>>> >> >> >> >> >> ----- Original Message -----
>>>>> >> From: Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>> >> Date: Thursday, May 27, 2010 6:54 am
>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >> To: Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> >> Cc: Calvin.Walker@noaa.gov <mailto:Calvin.Walker@noaa.gov>,
>>>>> Emille Cole <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>,
>>>>> >> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >> LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>
>>>>> >> >> >> >>> not to my knowledge having it checked now--Nicolle
>>>>> pls verify FEDEX >>> tracking #'s--Regards--Spencer
>>>>> >>> >>> Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:
>>>>> >>> >>>> do we have this? >>>>
>>>>> ---
>>>>> >>>> >>>> >>>> Subject:
>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >>>> From:
>>>>> >>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>> >>>> Date:
>>>>> >>>> Thu, 27 May 2010 06:57:47 -0400
>>>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> >>>> Corexit was shipped Monday. Since Dr. Garrett
>>>>> hasn't received it, >>>> >>> has >>>> he followed up with
>>>>> niccole. Seems like we should be able to track >>>> >>>
>>>>> the >>>> package.
>>>>> >>>> >>>> John
>>>>> >>>> >>>> >>>> Begin forwarded message:
>>>>> >>>> >>>> >>>> >>>>> *From:* "Nicolle.R.Rutherford"
>>>>> <Nicolle.R.Rutherford@noaa.gov
>>>>> >>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> <>>

>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT
>>>>> >>>>> *To:* Mary Gill <Mary.Gill@noaa.gov
>>>>> <mailto:Mary.Gill@noaa.gov> <>>
>>>>> >>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
>>>>> <mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>>
>>>>> <Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov> <>>,
>>>>> Jordan Stout <Jordan.Stout@noaa.gov <mailto:Jordan.Stout@noaa.gov>
>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine
>>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave
>>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov
>>>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>>
>>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>, John
>>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>, >>>>>
>>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy
>>>>> Gallagher >>>>> <timothy.gallagher@noaa.gov
>>>>> <mailto:timothy.gallagher@noaa.gov> <>>
>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
>>>>> >>>>> >>>>> Hi Mary,
>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527 was
>>>>> made by >>>>> NMFS through Tim Gallagher and was acted on
>>>>> two days ago. >>>>> See below. I have not received confirmation
>>>>> from Dr. Garrett that >>>>> the samples were received,
>>>>> although the samples should >>>>> have been >>>
>>>>> received >>>>> yesterday. The request was for only two liters
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>>>>> >>>>> >>>>> Nicolle
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>>>>> <nicolle.r.rutherford@noaa.gov
>>>>> <mailto:nicolle.r.rutherford@noaa.gov> <>>
>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov
>>>>> <mailto:Spencer.Garrett@noaa.gov> <>>
>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov
>>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka
>>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov> <>>
>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov
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>>>>> part of the sensory analysis program. The >>>>> >>>
>>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives,
>>>>> please confirm >>>>> >>> that >>>>> you have received it.
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>>>>> hesitate to >>>>> >>> call or >>>>> email.
>>>>> >>>>> >>>>> Cheers,
>>>>> >>>>> Nicolle Rutherford
>>>>> >>>>> Biologist
>>>>> >>>>> Emergency Response Division
>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)
>>>>> >>>>> 206-300-2994
>>>>> >>>>> >>>>>> >>>>>
>>

Received(Date): Fri, 28 May 2010 07:32:59 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: Re: Corexit - The Eagle has landed!
To: "'rsiger@doc.gov'" <rsiger@doc.gov>,"'Steve.Murawski@noaa.gov'" <Steve.Murawski@noaa.gov>,"'Monica.Medina@noaa.gov'" <Monica.Medina@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'margaret.spring@noaa.gov'" <Margaret.Spring@noaa.gov>,"'Chris.Beaverson@noaa.gov'" <Chris.Beaverson@noaa.gov>,"'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>,"'Spencer.Garrett@noaa.gov'" <Spencer.Garrett@noaa.gov>,"'Walton.W.Dickhoff@noaa.gov'" <Walton.W.Dickhoff@noaa.gov>
Cc: "'KSarri@doc.gov'" <KSarri@doc.gov>

Two liters is a start but I thought we needed 8.

From: Siger, Rick <RSiger@doc.gov>
To: Murawski, Steve <Steve.Murawski@noaa.gov>; Medina, Monica <Monica.Medina@noaa.gov>; Rapp, John <John.Rapp@noaa.gov>; Spring, Margaret <Margaret.Spring@noaa.gov>; Beaverson, Chris <Chris.Beaverson@noaa.gov>; Oliver, John <John.Oliver@noaa.gov>; Varanasi, Usha <Usha.Varanasi@noaa.gov>; Garrett, Spencer <Spencer.Garrett@noaa.gov>; Dickhoff, Walton <Walton.W.Dickhoff@noaa.gov>
Cc: Sarri, Kristen <KSarri@doc.gov>
Sent: Fri May 28 07:11:23 2010
Subject: RE: Corexit - The Eagle has landed!

Adding Kris Sarri who has been working this issue from DOC.

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Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

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From: Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To: Steve Murawski <Steve.Murawski@noaa.gov>
CC: Nicolle.R.Rutherford@noaa.gov,

timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm" <Dave.Westerholm@noaa.gov>, "william.conner" <William.Conner@noaa.gov>

References: <f669378a2f297e23.4bfebc8b@noaa.gov> <4BFF3280.9080907@noaa.gov> <4BFF3325.2090402@noaa.gov>

Hi Steve,

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>
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>
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>
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>>
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>> folks and can be the POC for future inquiries.
>>
>> Thanks again for shepherding the shipment. Now go home and get some
>> rest.
>>
>> gs
>>
>> Nicolle.R.Rutherford@noaa.gov wrote:
>>> They found them.
>>>
>>> Nicolle
>>>
>>> ---
>>>
>>>
>>> Subject:
>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
>>> From:
>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>> Date:
>>> Thu, 27 May 2010 14:04:33 -0500

>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>>
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>> CC:
>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson
>>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse <Lisa.Desfosse@noaa.gov>,
>>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple
>>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter
>>> <Cheryl.Lassitter@noaa.gov>, Emille Cole <Emille.Cole@noaa.gov>,
>>> Nicolle R Rutherford usha <Nicolle.R.Rutherford@noaa.gov>, Walton
>>> Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>>
>>>
>>> John et al-- the dispersant's have been received by NSIL with the
>>> sealed container intact --the products are in good condition --and--
>>> the Chain Of Custody (COC) documents being in correct order--the
>>> samples have been entered into our Laboratory COC process and is
>>> being held appropriately in a locked cabinet within a locked room--
>>> the volume meets our needs--thanks for all of the help you have
>>> given us in procuring these samples--Regards--Spencer
>>>
>>> -------- Original Message --------
>>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
>>> Request]]
>>> Date: Thu, 27 May 2010 11:04:39 -0700
>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>> To: Calvin Walker <Calvin.Walker@noaa.gov>
>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>,
>>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>
>>> References: <007501cafdc4$7c582810$75087830$%Wilson@noaa.gov>
>>> <4BFEB12C.3080007@noaa.gov>
>>>
>>>
>>>
>>> Calvin:
>>> John Rapp just called me about this, so I think we are squared
>>> away. Thanks -Walt
>>>
>>> On 5/27/10 10:51 AM, Calvin Walker wrote:
>>>> NWFSC will also need analytical reference stds, some for analytical
>>>> methods development, and for toxicity studies.
>>>>
>>>> Walt---how much is needed?
>>>>
>>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:
>>>>>
>>>>> We need to make sure we have reference vials for the State
>>>>> training in sensory as well as to use for spiking samples if
>>>>> necessary. 2L should suffice but please ask Bobby to be sure.
>>>>>
>>>>>
>>>>>
>>>>> Steven
>>>>>
>>>>>

>>>>>
>>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]
>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM
>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov
>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]
>>>>>
>>>>>
>>>>>
>>>>> Please respond ASAP or by 2 PM (Eastern).
>>>>> -------- Original Message --------
>>>>>
>>>>> *Subject: *
>>>>>
>>>>>
>>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>>
>>>>> *Date: *
>>>>>
>>>>>
>>>>> Thu, 27 May 2010 13:09:45 -0400
>>>>>
>>>>> *From: *
>>>>>
>>>>>
>>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>>
>>>>> *To: *
>>>>>
>>>>>
>>>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>>
>>>>> *CC: *
>>>>>
>>>>>
>>>>> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Nancy.Thompson@noaa.gov
>>>>> <mailto:Nancy.Thompson@noaa.gov>, Calvin.Walker@noaa.gov
>>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>,
>>>>> Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>,
>>>>> Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>,
>>>>> James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>,
>>>>> Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>,
>>>>> David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>,
>>>>> timothy.gallagher@noaa.gov <mailto:timothy.gallagher@noaa.gov>
>>>>>
>>>>> *References: *
>>>>>
>>>>>
>>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <4BFE7A04.3010503@noaa.gov> <mailto:4BFE7A04.3010503@noaa.gov>
>>>>> <f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <mailto:f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <4BFEA61C.2080802@noaa.gov> <mailto:4BFEA61C.2080802@noaa.gov>

>>>>>
>>>>>
>>>>>
>>>>> Spencer,
>>>>>
>>>>> Since you have received 2 L of each dispersant, is that a
>>>>> sufficient volume to do all planned work for seafood safety? DOC,
>>>>> in particular, wants to know the exact needs of your lab so
>>>>> testing proceeds with all necessary resources. Further, the USG
>>>>> overall is looking for assurance that there will be no lags in
>>>>> implementation, so I again ask for input on what's needed to keep
>>>>> this ball rolling. Thanks,
>>>>> John
>>>>>
>>>>> Spencer Garrett wrote:
>>>>> > Thanks for the info--Emille please track down--esg
>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:
>>>>> >> Package was delivered Tuesday, 25 May 2010 at 10:08 am. It was
>>>>> >> signed for by C. Bergman.
>>>>> >> Nicolle
>>>>> >> >> >> >> ----- Original Message -----
>>>>> >> From: Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>> >> Date: Thursday, May 27, 2010 6:54 am
>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >> To: Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> >> Cc: Calvin.Walker@noaa.gov <mailto:Calvin.Walker@noaa.gov>,
>>>>> Emille Cole <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>,
>>>>> >> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >> LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>
>>>>> >> >> >> >>> not to my knowledge having it checked now--Nicolle
>>>>> pls verify FEDEX >>> tracking #'s--Regards--Spencer
>>>>> >>> >>> Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:
>>>>> >>> >>>> do we have this? >>>>
>>>>> ---
>>>>> >>>> >>>> >>>> Subject:
>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >>>> From:
>>>>> >>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>> >>>> Date:
>>>>> >>>> Thu, 27 May 2010 06:57:47 -0400
>>>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> >>>> Corexit was shipped Monday. Since Dr. Garrett
>>>>> hasn't received it, >>>> >>> has >>>> he followed up with
>>>>> niccole. Seems like we should be able to track >>>> >>>
>>>>> the >>>> package.

>>>>> >>>> >>>> John
>>>>> >>>> >>>> >>>> Begin forwarded message:
>>>>> >>>> >>>> >>>>> *From:* "Nicolle.R.Rutherford"
>>>>> <Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> <>>
>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT
>>>>> >>>>> *To:* Mary Gill <Mary.Gill@noaa.gov
>>>>> <mailto:Mary.Gill@noaa.gov> <>>
>>>>> >>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
>>>>> <mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>>
>>>>> <Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov> <>>,
>>>>> Jordan Stout <Jordan.Stout@noaa.gov <mailto:Jordan.Stout@noaa.gov>
>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine
>>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave
>>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov
>>>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>>
>>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>, John
>>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>, >>>>>
>>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy
>>>>> Gallagher >>>>> <timothy.gallagher@noaa.gov
>>>>> <mailto:timothy.gallagher@noaa.gov> <>>
>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
>>>>> >>>>> >>>>> Hi Mary,
>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527 was
>>>>> made by >>>>> NMFS through Tim Gallagher and was acted on
>>>>> two days ago. >>>>> See below. I have not received confirmation
>>>>> from Dr. Garrett that >>>>> the samples were received,
>>>>> although the samples should >>>>> have been >>>
>>>>> received >>>>> yesterday. The request was for only two liters
>>>>> of each of the >>>>> dispersants, not four.
>>>>> >>>>> >>>>> Nicolle
>>>>> >>>>> >>>>> -------- Original Message --------
>>>>> >>>>> Subject: Re: Corexit 9500 & 9527 Request
>>>>> >>>>> Date: Mon, 24 May 2010 14:43:44 -0700
>>>>> >>>>> From: Nicolle.R.Rutherford
>>>>> <nicolle.r.rutherford@noaa.gov
>>>>> <mailto:nicolle.r.rutherford@noaa.gov> <>>
>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov
>>>>> <mailto:Spencer.Garrett@noaa.gov> <>>
>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov
>>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka
>>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov> <>>
>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov
>>>>> <mailto:4BF5B114.9010405@noaa.gov> <>>
>>>>> >>>>> >>>>> >>>>> >>>>> Hello Dr. Garrett,
>>>>> >>>>> I just FedExed a cooler containing two liters each of
>>>>> Corexit 9500 >>>>> >>> and >>>>> 9527 to you for use as
>>>>> part of the sensory analysis program. The >>>>> >>>
>>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives,
>>>>> please confirm >>>>> >>> that >>>>> you have received it.
>>>>> >>>>> >>>>> If you have any questions or concerns, please don't
>>>>> hesitate to >>>>> >>> call or >>>>> email.
>>>>> >>>>> >>>>> Cheers,
>>>>> >>>>> Nicolle Rutherford
>>>>> >>>>> Biologist
>>>>> >>>>> Emergency Response Division
>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)

>>>>> >>>>> 206-300-2994
>>>>> >>>>> >>>>>> >>>>>
>>

Received(Date): Fri, 28 May 2010 07:54:35 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: RE: Corexit - The Eagle has landed!
To: "Rapp, John" <John.Rapp@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>, "Siger, Rick" <RSiger@doc.gov>,"Murawski, Steve" <Steve.Murawski@noaa.gov>,"Rapp, John" <John.Rapp@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"Beaverson, Chris" <Chris.Beaverson@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>,"Varanasi, Usha" <Usha.Varanasi@noaa.gov>,"Garrett, Spencer" <Spencer.Garrett@noaa.gov>,"Dickhoff, Walton" <Walton.W.Dickhoff@noaa.gov>

Thank John. Please let us know what we can do to help. And to be safe – do we want 6 or 8 litters at each place? That way, we can have some to spare as well as be in a position to help our federal partner agencies if necessary.

From: john rapp [mailto:john.rapp@noaa.gov]
Sent: Friday, May 28, 2010 7:45 AM
To: Medina, Monica; Siger, Rick; Murawski, Steve; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Cc: Sarri, Kristen
Subject: Re: Corexit - The Eagle has landed!

We have 2 liters of each dispersant in MS and I talked to Seattle yesterday and their preference is to have a full 2 of each as well. So I'm just going to contact Nalco, get Seattle 4 liters, and put this issue to bed.

John

From: Monica Medina <monica.medina@noaa.gov>
To: 'rsiger@doc.gov' <rsiger@doc.gov>; 'Steve.Murawski@noaa.gov' <Steve.Murawski@noaa.gov>; 'Monica.Medina@noaa.gov' <Monica.Medina@noaa.gov>; 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'Chris.Beaverson@noaa.gov' <Chris.Beaverson@noaa.gov>; 'John.Oliver@noaa.gov' <John.Oliver@noaa.gov>; 'Usha.Varanasi@noaa.gov' <Usha.Varanasi@noaa.gov>; 'Spencer.Garrett@noaa.gov' <Spencer.Garrett@noaa.gov>; 'Walton.W.Dickhoff@noaa.gov' <Walton.W.Dickhoff@noaa.gov>
Cc: 'KSarri@doc.gov' <KSarri@doc.gov>
Sent: Fri May 28 07:32:59 2010
Subject: Re: Corexit - The Eagle has landed!

Two liters is a start but I thought we needed 8.

From: Siger, Rick <RSiger@doc.gov>
To: Murawski, Steve <Steve.Murawski@noaa.gov>; Medina, Monica <Monica.Medina@noaa.gov>; Rapp, John <John.Rapp@noaa.gov>; Spring, Margaret <Margaret.Spring@noaa.gov>; Beaverson, Chris <Chris.Beaverson@noaa.gov>; Oliver, John <John.Oliver@noaa.gov>; Varanasi, Usha <Usha.Varanasi@noaa.gov>; Garrett, Spencer <Spencer.Garrett@noaa.gov>; Dickhoff, Walton <Walton.W.Dickhoff@noaa.gov>
Cc: Sarri, Kristen <KSarri@doc.gov>
Sent: Fri May 28 07:11:23 2010
Subject: RE: Corexit - The Eagle has landed!

Adding Kris Sarri who has been working this issue from DOC.

From: Steve Murawski [Steve.Murawski@noaa.gov]
Sent: Thursday, May 27, 2010 11:15 PM
To: Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Siger, Rick; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

-------- Original Message --------

Subject:	Re: Fwd: [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
Date:	Thu, 27 May 2010 20:08:29 -0700
From:	Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To:	Steve Murawski <Steve.Murawski@noaa.gov>
CC:	Nicolle.R.Rutherford@noaa.gov, timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm" <Dave.Westerholm@noaa.gov>, "william.conner" <William.Conner@noaa.gov>
References:	<f669378a2f297e23.4bfebc8b@noaa.gov> <4BFF3280.9080907@noaa.gov> <4BFF3325.2090402@noaa.gov>

Hi Steve, If I understand the email chain here, Walt says that he is covered. gs Steve Murawski wrote:> Gary,> > Is part of this going to Seattle

to Usha and Walt D.?> > thanks> > Steve> > Gary Shigenaka wrote:>> Nicolle,>> >> I'm very glad that the "missing" Corexit samples were found safely in >> possession of the intended recipients. I'm also glad that you let me >> know, since we had a meeting in the command post last night on this >> subject and would have been diverted on a tangent had you not clued >> us in! I believe Greg Baker has also been in contact with the NMFS >> folks and can be the POC for future inquiries.>> >> Thanks again for shepherding the shipment. Now go home and get some >> rest.>> >> gs>> >> Nicolle.R.Rutherford@noaa.gov wrote:>>> They found them.>>> >>> Nicolle>>> >>> ---------- >>> >>> >>> Subject:>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]>>> From:>>> Spencer Garrett <Spencer.Garrett@noaa.gov>>> Date:>>> Thu, 27 May 2010 14:04:33 -0500>>> To:>>> John Rapp <John.Rapp@noaa.gov>>> >>> To:>>> John Rapp <John.Rapp@noaa.gov>>> CC:>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson >>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse <Lisa.Desfosse@noaa.gov>, >>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple >>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter >>> <Cheryl.Lassitter@noaa.gov>, Emille Cole <Emille.Cole@noaa.gov>, >>> Nicolle R Rutherford usha <Nicolle.R.Rutherford@noaagov>, Walton >>> Dickhoff <Walton.W.Dickhoff@noaa.gov>>>> >>> >>> John et al-- the dispersant's have been received by NSIL with the >>> sealed container intact --the products are in good condition --and-- >>> the Chain Of Custody (COC) documents being in correct order--the >>> samples have been entered into our Laboratory COC process and is >>> being held appropriately in a locked cabinet within a locked room-- >>> the volume meets our needs--thanks for all of the help you have >>> given us in procuring these samples--Regards--Spencer>>> >>> -------- Original Message --------->>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 >>> Request]]>>> Date: Thu, 27 May 2010 11:04:39 -0700>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>>> To: Calvin Walker <Calvin.Walker@noaa.gov>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>, >>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>>>> References: <007501cafdc4$7c582810$75087830$%Wilson@noaa.gov> >>> <4BFEB12C.3080007@noaa.gov>>>> >>> >>> Calvin:>>> John Rapp just called me about this, so I think we are squared >>> away. Thanks -Walt>>> >>> On 5/27/10 10:51 AM, Calvin Walker wrote:>>>> NWFSC will also need analytical reference stds, some for analytical >>>> methods development, and for toxicity studies.>>>> >>>> Walt---how much is needed?>>>> >>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:>>>>> >>>>> We need to make sure we have reference vials for the State >>>>> training in sensory as well as to use for spiking samples if >>>>> necessary. 2L should suffice but please ask Bobby to be sure>>>>> >>>>> >>>>> Steven>>>>> >>>>> >>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]>>>>> >>>>> >>>>> Please respond ASAP or by 2 PM (Eastern).>>>>> -------- Original Message --------->>>>> >>>>> *Subject: *>>>>> >>>>> >>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]>>>>> >>>>> *Date: *>>>>> >>>>> >>>>> Thu, 27 May 2010 13:09:45 -0400>>>>> >>>>> *From: *>>>>> >>>>> >>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>>>>> >>>>> *To: *>>>>> >>>>> >>>>> Spencer Garrett <Spencer.Garrett@noaa.gov> >>>>> <mailto:Spencer.Garrett@noaa.gov>>>>> >>>>> >>>>> *CC: *>>>>> >>>>> >>>>> Nicolle.R.Rutherford@noaa.gov >>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Nancy.Thompson@noaa.gov >>>>> <mailto:Nancy.Thompson@noaa.gov>, Calvin.Walker@noaa.gov >>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole >>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, LaShonda >>>>> Finch <LaShonda.Finch@noaa.gov> <mailto:LaShonda.Finch@noaa.gov>, >>>>>

Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>, >>>>>
Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>, >>>>>
James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>, >>>>>
Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>, >>>>>
David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>, >>>>>
timothy.gallagher@noaa.gov <mailto:timothy.gallagher@noaa.gov>>>>>> >>>>>
*References: *>>>>> >>>>> >>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov> >>>>>
<4BFE7A04.3010503@noaa.gov> <mailto:4BFE7A04.3010503@noaa.gov> >>>>>
<f4991a3235eb9d7.4bfe426e@noaa.gov> >>>>>
<mailto:f4991a3235eb9d7.4bfe426e@noaa.gov> >>>>> <4BFEA61C.2080802@noaa.gov>
<mailto:4BFEA61C.2080802@noaa.gov>>>>> >>>>> >>>>> >>>>> Spencer,>>>>>
>>>>> Since you have received 2 L of each dispersant, is that a >>>>>
sufficient volume to do all planned work for seafood safety? DOC, >>>>> in
particular, wants to know the exact needs of your lab so >>>>> testing
proceeds with all necessary resources. Further, the USG >>>>> overall is
looking for assurance that there will be no lags in >>>>> implementation, so I
again ask for input on what's needed to keep >>>>> this ball rolling.
Thanks,>>>>> John>>>>> >>>>> Spencer Garrett wrote:>>>>> > Thanks for the
info--Emille please track down--esg>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:>>>>> >> Package was
delivered Tuesday, 25 May 2010 at 10:08 am. It was >>>>> >> signed for by C.
Bergman.>>>>> >> Nicolle>>>>> >> >> >> >> >> ----- Original Message ----->>>>>
>> From: Spencer Garrett <Spencer.Garrett@noaa.gov> >>>>>
<mailto:Spencer.Garrett@noaa.gov>>>>> >> Date: Thursday, May 27, 2010 6:54
am>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]>>>>> >>
To: Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>>>>> >> Cc:
Calvin.Walker@noaa.gov <mailto:Calvin.Walker@noaa.gov>, >>>>> Emille Cole
<Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >>>>> >>
Nicolle.R.Rutherford@noaa.gov >>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>,
Emille Cole >>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >>
LaShonda >>>>> Finch <LaShonda.Finch@noaa.gov>
<mailto:LaShonda.Finch@noaa.gov>>>>> >> >> >> >>> not to my knowledge having
it checked now--Nicolle >>>>> pls verify FEDEX >>> tracking #'s--Regards--
Spencer>>>>> >>> >>> Nancy.Thompson@noaa.gov <mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:>>>>> >>> >>>> do we have this? >>>> >>>
>> ----------
>>>>> >>>> >>>> >>>> Subject:>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527
Request]>>>>> >>>> From:>>>>> >>>> John Rapp <John.Rapp@noaa.gov>
<mailto:John.Rapp@noaa.gov>>>>> >>>> Date:>>>>> >>>> Thu, 27 May 2010
06:57:47 -0400>>>>> >>>> To:>>>>> >>>> Steve Murawski
<Steve.Murawski@noaa.gov> >>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy
Thompson >>>> >>>>> <Nancy.Thompson@noaa.gov>
<mailto:Nancy.Thompson@noaa.gov>>>>> >>>> >>>> To:>>>>> >>>> Steve Murawski
<Steve.Murawski@noaa.gov> >>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy
Thompson >>>> >>>>> <Nancy.Thompson@noaa.gov>
<mailto:Nancy.Thompson@noaa.gov>>>>> >>>> >>>> >>>> Corexit was shipped
Monday. Since Dr. Garrett >>>>> hasn't received it, >>>> >>> has
>>>> he followed up with >>>>> niccole. Seems like we should be able to track
>>>> >>> >>>>> the >>>> package.>>>>> >>>> >>>> John>>>>> >>>> >>>>
>>>> Begin forwarded message:>>>>> >>>> >>>> >>>>> *From:*
"Nicolle.R.Rutherford" >>>>> <Nicolle.R.Rutherford@noaagov >>>>
<mailto:Nicolle.R.Rutherfo
rd@noaa.gov> <>>>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT>>>>> >>>>>
To: Mary Gill <Mary.Gill@noaa.gov >>>> <mailto:Mary.Gill@noaa.gov> <>>>>>>
>>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov >>>>
<mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>> >>>>>

<Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov> <>>, >>>>> Jordan Stout <Jordan.Stout@noaa.gov <mailto:Jordan.Stout@noaa.gov>>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine >>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave >>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov >>>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>> >>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>, John >>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>, >>>>> >>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy >>> >> Gallagher >>>>> <timothy.gallagher@noaa.gov >>>>> <mailto:timothy.gallagher@noaa.gov> <>>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*>>>>> >>>>> >>>>> Hi Mary,>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527 was >>>>> made by >>>>> NMFS through Tim Gallagher and was acted on >>>>> two days ago. >>>>> See below. I have not received confirmation >>>>> from Dr. Garrett that >>>>> the samples were received, >>>>> although the samples should >>>>> have been >>> >>>>> received >>>>> yesterday. The request was for only two liters >>>>> of each of the >>>>> dispersants, not four.>>>>> >>>>> >>>>> Nicolle>>>>> >>>>> >>>>> -------- Original Message --------->>>>> >>>>> Subject: Re: Corexit 9500 & 9527 Request>>>>> >>>>> Date: Mon, 24 May 2010 14:43:44 -0700>>> >> >>>>> From: Nicolle.R.Rutherford >>>>> <nicolle.r.rutherford@noaagov >>>>> <mailto:nicolle.r.rutherfo rd@noaa.gov> <>>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov >>>>> <mailto:Spencer.Garrett@noaa.gov> <>>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov >>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka >>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov> <>>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov >>>>> <mailto:4BF5B114.9010405@noaa.gov> <>>>>>> >>>>> >>>>> >>>>> >>>>> Hello Dr. Garrett,>>>>> >>>>> I just FedExed a cooler containing two liters each of >>>>> Corexit 9500 >>>>> >>> and >>>>> 9527 to you for use as >>>>> part of the sensory analysis program. The >>>>> >>> >>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives, >>>>> please confirm >>>>> >>> that >>>>> you have received it.>>>>> >>>>> >>>>> If you have any questions or concerns, please don't >>>>> hesitate to >>>>> >>> call or >>>>> email.>>>>> >>>>> >>>>> Cheers,>>>>> >>>>> Nicolle Rutherford>>>>> >>>>> Biologist>>>>> >>>>> Emergency Response Division>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)>>>>> >>>>> 206-300-2994>>>>> >>>>> >>>>>> >>>>> >>

Received(Date): Fri, 28 May 2010 07:20:05 -0700
From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
Subject: Re: Corexit - The Eagle has landed!
To: john rapp <John.Rapp@noaa.gov>

That would be perfect John - please make sure that they include Chain 0f Custody documentation with the shipment. Thanks! -Walt
On May 28, 2010, at 4:44 AM, john rapp wrote:

> **We have 2 liters of each dispersant in MS and I talked to Seattle yesterday and their preference is to have a full 2 of each as well. So I'm just going to contact Nalco, get Seattle 4 liters, and put this issue to bed.**
>
> **John**

From: Monica Medina <monica.medina@noaa.gov>
To: 'rsiger@doc.gov' <rsiger@doc.gov>; 'Steve.Murawski@noaa.gov' <Steve.Murawski@noaa.gov>; 'Monica.Medina@noaa.gov' <Monica.Medina@noaa.gov>; 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'Chris.Beaverson@noaa.gov' <Chris.Beaverson@noaa.gov>; 'John.Oliver@noaa.gov' <John.Oliver@noaa.gov>; 'Usha.Varanasi@noaa.gov' <Usha.Varanasi@noaa.gov>; 'Spencer.Garrett@noaa.gov' <Spencer.Garrett@noaa.gov>; 'Walton.W.Dickhoff@noaa.gov' <Walton.W.Dickhoff@noaa.gov>
Cc: 'KSarri@doc.gov' <KSarri@doc.gov>
Sent: Fri May 28 07:32:59 2010
Subject: Re: Corexit - The Eagle has landed!

> Two liters is a start but I thought we needed 8.

From: Siger, Rick <RSiger@doc.gov>
To: Murawski, Steve <Steve.Murawski@noaa.gov>; Medina, Monica <Monica.Medina@noaa.gov>; Rapp, John <John.Rapp@noaa.gov>; Spring, Margaret <Margaret.Spring@noaa.gov>; Beaverson, Chris <Chris.Beaverson@noaa.gov>; Oliver, John <John.Oliver@noaa.gov>; Varanasi, Usha <Usha.Varanasi@noaa.gov>; Garrett, Spencer <Spencer.Garrett@noaa.gov>; Dickhoff, Walton <Walton.W.Dickhoff@noaa.gov>
Cc: Sarri, Kristen <KSarri@doc.gov>
Sent: Fri May 28 07:11:23 2010
Subject: RE: Corexit - The Eagle has landed!

> Adding Kris Sarri who has been working this issue from DOC.

From: Steve Murawski [Steve.Murawski@noaa.gov]
Sent: Thursday, May 27, 2010 11:15 PM
To: Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Siger, Rick; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

-------- Original Message --------

Subject: Re: Fwd: [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
Date: Thu, 27 May 2010 20:08:29 -0700
From: Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To: Steve Murawski <Steve.Murawski@noaa.gov>
CC: Nicolle.R.Rutherford@noaa.gov, timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm" <Dave.Westerholm@noaa.gov>, "william.conner" <William.Conner@noaa.gov>
References: <f669378a2f297e23.4bfebc8b@noaa.gov> <4BFF3280.9080907@noaa.gov> <4BFF3325.2090402@noaa.gov>

Hi Steve,

If I understand the email chain here, Walt says that he is covered.

gs

Steve Murawski wrote:
> Gary,
>
> Is part of this going to Seattle to Usha and Walt D.?
>
> thanks
>
> Steve
>
> Gary Shigenaka wrote:
>> Nicolle,
>>

>> I'm very glad that the "missing" Corexit samples were found
safely in
>> possession of the intended recipients. I'm also glad that you
let me
>> know, since we had a meeting in the command post last night on
this
>> subject and would have been diverted on a tangent had you not
clued
>> us in! I believe Greg Baker has also been in contact with the
NMFS
>> folks and can be the POC for future inquiries.
>>
>> Thanks again for shepherding the shipment. Now go home and get
some
>> rest.
>>
>> gs
>>
>> Nicolle.R.Rutherford@noaa.gov wrote:
>>> They found them.
>>>
>>> Nicolle
>>>
>>> ---
>>>
>>>
>>> Subject:
>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
Request]]]
>>> From:
>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>> Date:
>>> Thu, 27 May 2010 14:04:33 -0500
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>>
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>> CC:
>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson
>>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse
<Lisa.Desfosse@noaa.gov>,
>>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple
>>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter
>>> <Cheryl.Lassitter@noaa.gov>, Emille Cole
<Emille.Cole@noaa.gov>, >>> Nicolle R Rutherford usha
<Nicolle.R.Rutherford@noaa.gov>, Walton
>>> Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>>
>>>
>>> John et al-- the dispersant's have been received by NSIL with
the
>>> sealed container intact --the products are in good condition --
and--
>>> the Chain Of Custody (COC) documents being in correct order--
the
>>> samples have been entered into our Laboratory COC process and

is
>>> being held appropriately in a locked cabinet within a locked
room--
>>> the volume meets our needs--thanks for all of the help you
have
>>> given us in procuring these samples--Regards--Spencer
>>>
>>> -------- Original Message --------
>>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 &
9527
>>> Request]]
>>> Date: Thu, 27 May 2010 11:04:39 -0700
>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>> To: Calvin Walker <Calvin.Walker@noaa.gov>
>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>,
>>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>
>>> References:
<007501cafdc4$7c582810$75087830$%Wilson@noaa.gov>
>>> <4BFEB12C.3080007@noaa.gov>
>>>
>>>
>>>
>>> Calvin:
>>> John Rapp just called me about this, so I think we are squared
>>> away. Thanks -Walt
>>>
>>> On 5/27/10 10:51 AM, Calvin Walker wrote:
>>>> NWFSC will also need analytical reference stds, some for
analytical
>>>> methods development, and for toxicity studies.
>>>>
>>>> Walt---how much is needed?
>>>>
>>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:
>>>>>
>>>>> We need to make sure we have reference vials for the State
>>>>> training in sensory as well as to use for spiking samples if
>>>>> necessary. 2L should suffice but please ask Bobby to be
sure.
>>>>>
>>>>>
>>>>>
>>>>> Steven
>>>>>
>>>>>
>>>>>
>>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]
>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM
>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov
>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
Request]]
>>>>>
>>>>>
>>>>>
>>>>> Please respond ASAP or by 2 PM (Eastern).
>>>>> -------- Original Message --------
>>>>>

>>>>> *Subject: *
>>>>>
>>>>>
>>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>>
>>>>> *Date: *
>>>>>
>>>>>
>>>>> Thu, 27 May 2010 13:09:45 -0400
>>>>>
>>>>> *From: *
>>>>>
>>>>>
>>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>>
>>>>> *To: *
>>>>>
>>>>>
>>>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>>
>>>>> *CC: *
>>>>>
>>>>>
>>>>> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>,
Nancy.Thompson@noaa.gov
>>>>> <mailto:Nancy.Thompson@noaa.gov>, Calvin.Walker@noaa.gov
>>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>,
LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov>
<mailto:LaShonda.Finch@noaa.gov>,
>>>>> Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>,
>>>>> Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>,
>>>>> James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>,
>>>>> Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>,
>>>>> David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>,
>>>>> timothy.gallagher@noaa.gov
<mailto:timothy.gallagher@noaa.gov>
>>>>>
>>>>> *References: *
>>>>>
>>>>>
>>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <4BFE7A04.3010503@noaa.gov>
<mailto:4BFE7A04.3010503@noaagov>
>>>>> <f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <mailto:f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <4BFEA61C.2080802@noaa.gov>
<mailto:4BFEA61C.2080802@noaagov>
>>>>>
>>>>>
>>>>>
>>>>> Spencer,
>>>>>

>>>>> Since you have received 2 L of each dispersant, is that a
>>>>> sufficient volume to do all planned work for seafood safety?
DOC,
>>>>> in particular, wants to know the exact needs of your lab so
>>>>> testing proceeds with all necessary resources. Further, the
USG
>>>>> overall is looking for assurance that there will be no lags
in
>>>>> implementation, so I again ask for input on what's needed to
keep
>>>>> this ball rolling. Thanks,
>>>>> John
>>>>>
>>>>> Spencer Garrett wrote:
>>>>> > Thanks for the info--Emille please track down--esg
>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:
>>>>> >> Package was delivered Tuesday, 25 May 2010 at 10:08 am.
It was
>>>>> >> signed for by C. Bergman.
>>>>> >> Nicolle
>>>>> >> >> >> >> ----- Original Message -----
>>>>> >> From: Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>> >> Date: Thursday, May 27, 2010 6:54 am
>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >> To: Nancy.Thompson@noaa.gov
<mailto:Nancy.Thompson@noaa.gov>
>>>>> >> Cc: Calvin.Walker@noaa.gov
<mailto:Calvin.Walker@noaa.gov>,
>>>>> Emille Cole <Emille.Cole@noaa.gov>
<mailto:Emille.Cole@noaa.gov>,
>>>>> >> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >>
LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov>
<mailto:LaShonda.Finch@noaa.gov>
>>>>> >> >> >> >>> not to my knowledge having it checked now--
Nicolle
>>>>> pls verify FEDEX >>> tracking #'s--Regards--Spencer
>>>>> >>> >>> Nancy.Thompson@noaa.gov
<mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:
>>>>> >>>   >>>> do we have this? >>>>
>>>>> ----------
>>>>> >>>> >>>> >>>> Subject:
>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >>>> From:
>>>>> >>>> John Rapp <John.Rapp@noaa.gov>
<mailto:John.Rapp@noaa.gov>
>>>>> >>>> Date:
>>>>> >>>> Thu, 27 May 2010 06:57:47 -0400
>>>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>

>>>>> >>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> >>>> Corexit was shipped Monday. Since Dr.
Garrett
>>>>> hasn't received it, >>>> >>> has >>>> he followed
up with
>>>>> niccole. Seems like we should be able to track >>>>
>>>
>>>>> the >>>> package.
>>>>> >>>> >>>> John
>>>>> >>>> >>>> >>>> Begin forwarded message:
>>>>> >>>> >>>> >>>>> *From:* "Nicolle.R.Rutherford"
>>>>> <Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> <>>
>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT
>>>>> >>>>> *To:* Mary Gill <Mary.Gill@noaa.gov
>>>>> <mailto:Mary.Gill@noaa.gov> <>>
>>>>> >>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
>>>>> <mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>>
>>>>> <Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>
<>>,
>>>>> Jordan Stout <Jordan.Stout@noaa.gov
<mailto:Jordan.Stout@noaa.gov>
>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine
>>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave
>>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov
>>>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>>
>>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>,
John
>>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>,
>>>>>
>>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy
>>>>> Gallagher >>>>> <timothy.gallagher@noaa.gov >>>>>
<mailto:timothy.gallagher@noaa.gov> <>>
>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
>>>>> >>>>> >>>>> Hi Mary,
>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527
was
>>>>> made by >>>>> NMFS through Tim Gallagher and was
acted on
>>>>> two days ago. >>>>> See below. I have not received
confirmation
>>>>> from Dr. Garrett that >>>>> the samples were
received,
>>>>> although the samples should >>>>> have been >>>
>>>>> received >>>>> yesterday. The request was for only two
liters
>>>>> of each of the >>>>> dispersants, not four.
>>>>> >>>>> >>>>> Nicolle
>>>>> >>>>> >>>>> -------- Original Message --------
>>>>> >>>>> Subject: Re: Corexit 9500 & 9527 Request
>>>>> >>>>> Date: Mon, 24 May 2010 14:43:44 -0700
>>>>> >>>>> From: Nicolle.R.Rutherford >>>>>
<nicolle.r.rutherford@noaa.gov
>>>>> <mailto:nicolle.r.rutherford@noaa.gov> <>>

>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov >>>>> <mailto:Spencer.Garrett@noaa.gov> <>>
>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov >>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka
>>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov> <>>
>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov >>>>> <mailto:4BF5B114.9010405@noaagov> <>>
>>>>> >>>>> >>>>> >>>>> Hello Dr. Garrett,
>>>>> >>>>> I just FedExed a cooler containing two liters each of
>>>>> Corexit 9500 >>>>> >>> and >>>>> 9527 to you for use as
>>>>> part of the sensory analysis program. The >>>>> >>>
>>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives,
>>>>> please confirm >>>>> >>> that >>>>> you have received it.
>>>>> >>>>> >>>>> If you have any questions or concerns, please don't
>>>>> hesitate to >>>>> >>> call or >>>>> email.
>>>>> >>>>> >>>>> Cheers,
>>>>> >>>>> Nicolle Rutherford
>>>>> >>>>> Biologist
>>>>> >>>>> Emergency Response Division
>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)
>>>>> >>>>> 206-300-2994
>>>>> >>>>> >>>>>> >>>>>
>>

Received(Date): Fri, 28 May 2010 12:27:09 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: URGENT Clearance Request
To: Justin Kenney <Justin.kenney@noaa.gov>
Cc: "Christopher.S.Moore@noaa.gov" <Christopher.S.Moore@noaa.gov>,"william.conner" <William.Conner@noaa.gov>,Craig McLean <Craig.Mclean@noaa.gov>,"Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"Gilson, Shannon (Commerce)" <SGilson@doc.gov>,"Smullen, Scott" <Scott.Smullen@noaa.gov>

on 1 we should say that the GUNTER's chief scientist is Dr. Russel Brown, chief of the resource surveys branch in Woods Holre, Mass, reflecting the "all hands on deck" aspects of this

Second, we should say that upon completion of minor repairs the THOMAS JEFFERSON will embark a water sampling team from the Woods Hole Oceanographic Institution to do a combined surface and subsurface tracking mission

PICES and Oregon II are under repairs but will be available shortly for tasking.

Justin Kenney wrote:

> Thank you all for your help answering the NYTimes questions. Please review the Q&A below and let me know if you have any final edits, additions, deletions. Thank you for your earliest attention to this request.
>
> Regards,
>
> Justin Kenney
>
> NOAA Director of Communications and External Affairs
>
> Office: 202-482-6090 | Cell: 202-821-6310
>
> Email: justin.kenney@noaa.gov
>
> Facebook: www.facebook.com/noaa.lubchenco
>
> **1. Which NOAA vessels are in the gulf now with scientific missions associated with the spill? Can you provide a sentence or two on**

each boat and its mission?

NOAA Ship Gordon Gunter is conducting an acoustic survey of the submerged oil field, collecting water samples throughout the water column, and net sampling pelagic species throughout the water column.

Scientific personnel from the University of New Hampshire-Joint Hydrographic Center are onboard to assist with the acoustic survey. Monterey Bay Aquarium Research Institute has personnel and an Autonomous Underwater Vehicle on board ("Gulper") to collect discrete water samples at depth. Scientist from the NMFS Southeast Fisheries Science Center are operating a MOCNESS net (multiple opening closing net) to collect biological samples at discrete depths.

NOAA Ship Thomas Jefferson completed a cruise with Naval Oceanographic personnel deploying 2 gliders, 6 current drifters and 5 profiling floats at 9 different sampling stations along the western edge of the oil slick.

2. Which NOAA boats are on their way to the gulf but have not yet arrived?

NOAA Ships Nancy Foster, Pisces, and Oregon II are standing by for tasking and offer unique oceanographic and acoustic capabilities.

3. Besides its own vessels, how many other boat expeditions has NOAA funded, using UNOLS boats or by hiring private vessels?

NOAA has coordinated research efforts with the UNOLS vessel R/V Weatherbird II.

NOAA has funded R/V Pelican that is conducting near coastal work and sampling work around the well-head to asses and monitor the oil spill.

Document ID: 0.7.19.1346

NOAA has contracted F/V Simple Man and F/V Beau Rivage to collect baseline seafood samples for the Seafood Inspection Program.

4. What are the 2 or 3 most urgent priorities, in NOAA's view, for the science boats that are heading into the gulf?

NOAA's immediate research priorities are (1) distribution of surface and sub-surface oil and dispersants and (2) seafood safety.

5. Based on data that have come in so far, can NOAA make any estimate of how much of the oil is surfacing right away and how much is remaining in the deep sea?

As you know, we have a new estimate of flow rate. We are currently working with our federal partners to conduct a "mass balance calculation" of oil at surface and sub-surface.

6. The researchers I am talking to complain, almost universally, that NOAA's scientific response was too slow in the initial weeks after the spill. What is NOAA's reaction to that?

When this event began, the Gordon Gunter was at sea and continued on its mission to collect biological samples of pelagic fish, eggs and larvae, as well as oceanography data. This research is critical to understanding the impacts of the spill on the long-term productivity of such species and bluefin tuna, and it provided important information for trajectory modeling. As the situation has evolved, we have developed a research mission for the Gordon Gunter to use its unique capabilities in acoustics and subsurface sampling to help track subsurface distributions of oil and dispersants. We have MBARI on board with its AUV Gulper that means we can collect discrete water samples without being tethered to a wire. This mission is underway and is part of a two-ship strategy, with the Weatherbird operating from the south and the Gunter from the north.

Document ID: 0.7.19.1346

The NOAA ship Thomas Jefferson, in partnership with the US Navy, deployed a field of drifters and gliders, to better calibrate the oceanographic models. NOAA is redeploying the TJ next week to look to the west of the Mississippi for subsurface oil.

NOAA's small boat fleet, including the Caretta and Gandy, immediately began collected seafood samples ahead of the oil. These boats are part of a four-boat strategy, along with two chartered vessels (commercial fishing boats Beau Rivage and HST) that put in place immediately to get baseline seafood samples. This strategy is central to ability to ensure seafood safety in the gulf. NOAA Flower Garden Banks National Marine Sanctuary's R/V Manta deployed to collect baseline data at this important coral reef.

The R/V Pelican was under contract to NOAA to conduct deepsea coral research. It was immediately repurposed to conduct work in and around the wellhead to look for subsurface signatures of the plume, the first vessel to be doing so. It has provided information important information that is still being analyzed.

NOAA's aircraft have been on the scene from the start as well. The P-3 is deploying oceanographic instruments into the loop current to understand the transport of surface and subsurface oil. This effort has been incredibly valluanel to the mpodeling efforts. NOAA's two Twin Otter have been conducting daily flights to provide surface maps of oil distribution and spot distribution and numbers of turtles, dolphins and whales. NOAA's King Air out of New Orleans is also conducting daily flight to conduct coastal mapping surverys.

NOAA scientists have also been at work from the start, including our role as Scientific Support Coordinator to the Unified Command. NOAA meteorologists, biologists, oceanographers, etc. As you can see there are many issues that concern NOAA, including protected species, oil spill trajectory, seafood safety, shoreline assessments, fishery management, national marine sanctuaries, national estuarine research reserves, and others.

7. How much does the new flow estimate alter NOAA's sense of the risk

to ecosystems from the spill?

Clearly, the more oil in the water the greater the risk to the environment, and

NOAA's scientific strategy remains multi-dimensional and multi-directional. The BP oil spill is an unprecedented and dynamic event. From the start, NOAA's research strategies have been aggressive, adaptive and strategic.

Received(Date): Fri, 28 May 2010 13:02:10 -0400
From: Monica Medina <Monica.Medina@noaa.gov>
Subject: RE: seafood safety call with states
To: "McGrath, Shaun L." <Shaun_L._McGrath@who.eop.gov>,Monica Medina <Monica.Medina@noaa.gov>,"McCarthy, Nell" <Nell_McCarthy@who.eop.gov>,"Fitzpatrick, Michael A." <Michael_A._Fitzpatrick@omb.eop.gov>,"Cuellar, Mariano-Florentino" <Mariano-Florentino_Cuellar@who.eop.gov>,"Mancini, Dominic J." <Dominic_J._Mancini@omb.eop.gov>,"Malanoski, Margaret A." <Margaret_A._Malanoski@omb.eop.gov>,"Rostker, David" <David_Rostker@omb.eop.gov>,"Perraut, Andrew B." <Andrew_B._Perraut@omb.eop.gov>,"Grawe, William" <William.R.Grawe@uscg.dhs.gov>,"Stebbins, Michael J." <Michael_J._Stebbins@ostp.eop.gov>,"Schmeissner, Peter J." <Peter_J._Schmeissner@ostp.eop.gov>,"Murawski, Steve" <Steve.Murawski@noaa.gov>,"Mike.Taylor@fda.hhs.gov" <Mike.Taylor@fda.hhs.gov>,"Hansen, Timothy" <Timothy.Hansen@noaa.gov>,"Wilson, Steven" <Steven.Wilson@noaa.gov>,"Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Sarri, Kristen" <KSarri@doc.gov>,"Donald.Kraemer@fda.hhs.gov" <Donald.Kraemer@fda.hhs.gov>,"Dickey, Robert W" <Robert.Dickey@fda.hhs.gov>,"Boots, Michael J." <Michael_J._Boots@ceq.eop.gov>,"Higginbottom, Heather A." <Heather_A._Higginbottom@who.eop.gov>,"Onek, Matthew M." <Matthew_M._Onek@who.eop.gov>,"Monje, Carlos A." <Carlos_A._Monje@who.eop.gov>,"Weatherly, Mark A." <Mark_A._Weatherly@omb.eop.gov>,"Lyon, Randolph M." <Randolph_M._Lyon@omb.eop.gov>,"Reilly, Thomas M." <Thomas_M._Reilly@omb.eop.gov>,"Fontenot, Keith J." <Keith_J._Fontenot@omb.eop.gov>,"Garufi, Marc" <Marc_Garufi@omb.eop.gov>,"Levenbach, Stuart" <Stuart_Levenbach@omb.eop.gov>,"Frey, Nathan J." <Nathan_J._Frey@omb.eop.gov>,"Molly.Muldoon@fda.hhs.gov" <Molly.Muldoon@fda.hhs.gov>,"Dora.Hughes@hhs.gov" <Dora.Hughes@hhs.gov>,"Michael.Landa@fda.hhs.gov" <Michael.Landa@fda.hhs.gov>,"Buffa, Nicole" <Nicole_Buffa@ceq.eop.gov>,"Neyland, Kevin F." <Kevin_F._Neyland@omb.eop.gov>,"Hagan, Michael B." <Michael_B._Hagan@omb.eop.gov>,"Hart, Nicholas R." <Nicholas_R._Hart@omb.eop.gov>,"Weiss, Michael I." <Michael_I._Weiss@ceq.eop.gov>,"Palm, Mary E." <Mary_E._Palm@ostp.eop.gov>,Usha Varanasi <Usha.Varanasi@noaa.gov>,"Davenport, Joanne Chow" <Joanne_Chow_Davenport@omb.eop.gov>,"Bigler.Jeff@epamail.epa.gov" <Bigler.Jeff@epamail.epa.gov>,Linda Chaves <Linda.Chaves@noaa.gov>,"Barringer, Jody M." <Jody_M._Barringer@omb.eop.gov>,"Uhlenbrock, Kristan M." <Kristan_M._Uhlenbrock@ceq.eop.gov>,"Engle.Virginia@epamail.epa.gov" <Engle.Virginia@epamail.epa.gov>,"Bolger, Philip M" <Mike.Bolger@fda.hhs.gov>,"Fong, Tera L." <Tera_L._Fong@omb.eop.gov>,"Washington.Evelyn@epa.gov" <Washington.Evelyn@epa.gov>,"Ohanian.Edward@epamail.epa.gov" <Ohanian.Edward@epamail.epa.gov>,Evelyn Washington/DC/USEPA/US <Washington.Evelyn@epamail.epa.gov>,"Radosevich, Tara J." <Tara_J._Radosevich@ceq.eop.gov>,"Malhotra, Stefan" <Sanjay_S._Malhotra@ceq.eop.gov>,"Schoeny.Rita@epa.gov" <Schoeny.Rita@epa.gov>,Kimani Kimbrough <Kimani.Kimbrough@noaa.gov>,"Koufopoulos, Peter N" <Peter.Koufopoulos@fda.hhs.gov>,"John E. Stein" <John.E.Stein@noaa.gov>,Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, Justin Kenney <Justin.kenney@noaa.gov>,"Beck, Nancy" <Nancy_Beck@omb.eop.gov>,"paul.dioguardi@hhs.gov" <paul.dioguardi@hhs.gov>,"Kidwell, Lauren (HHS/ASL)" <Lauren.Kidwell@hhs.gov>,"Pallone.Sarah@epamail.epa.gov" <Pallone.Sarah@epamail.epa.gov>,"Schneider, Drew" <Drew.Schneider@dhs.gov>
Cc: Linda belton <Linda.Belton@noaa.gov>

Excellent thanks! Will keep them looped in. Plus am adding the nic folks Juliette suggested.

From: McGrath, Shaun L. [mailto:Shaun_L._McGrath@who.eop.gov]

Sent: Friday, May 28, 2010 12:58 PM
To: Monica Medina; McCarthy, Nell; Fitzpatrick, Michael A.; Cuellar, Mariano-Florentino; Mancini, Dominic J.; Malanoski, Margaret A.; Rostker, David; Perraut, Andrew B.; Stebbins, Michael J.; Schmeissner, Peter J.; Murawski, Steve; Mike.Taylor@fda.hhs.gov; Hansen, Timothy; Wilson, Steven; Lugo, Lauren; Rapp, John; Sarri, Kristen; Donald.Kraemer@fda.hhs.gov; Dickey, Robert W; Boots, Michael J.; Higginbottom, Heather A.; Onek, Matthew M.; Monje, Carlos A.; Weatherly, Mark A.; Lyon, Randolph M.; Reilly, Thomas M.; Fontenot, Keith J.; Garufi, Marc; Levenbach, Stuart; Frey, Nathan J.; Molly.Muldoon@fda.hhs.gov; Dora.Hughes@hhs.gov; Michael.Landa@fda.hhs.gov; Buffa, Nicole; Neyland, Kevin F.; Hagan, Michael B.; Hart, Nicholas R.; Weiss, Michael I.; Palm, Mary E.; Usha Varanasi; Davenport, Joanne Chow; Bigler.Jeff@epamail.epa.gov; Linda Chaves; Barringer, Jody M.; Uhlenbrock, Kristan M.; Engle.Virginia@epamail.epa.gov; Bolger, Philip M; Fong, Tera L.; Washington.Evelyn@epa.gov; Ohanian.Edward@epamail.epa.gov; Evelyn Washington/DC/USEPA/US; Radosevich, Tara J.; Malhotra, Stefan; Schoeny.Rita@epa.gov; Kimani Kimbrough; Koufopoulos, Peter N; John E. Stein; Walton Dickhoff; Gilson, Shannon; Justin Kenney; Beck, Nancy; paul.dioguardi@hhs.gov; Kidwell, Lauren (HHS/ASL); Pallone.Sarah@epamail.epa.gov
Cc: Linda belton
Subject: RE: seafood safety call with states

+ IGA for HHS and EPA

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Cc: Linda belton
Subject: seafood safety call with states

Hi all – Reporting back on the efforts to set up a call with the states on Tuesday morning. The call is tentatively set for 11:30 a.m. eastern time on Tuesday. Shaun in WH IGA is going to reach out to the states on our behalf. I will let you know if he runs into scheduling difficulties. We need to let him know who will be in attendance from each agency and who will be briefing this. I think it should be one briefer from NOAA and one from FDA, and then whoever else needs to be on the call from NOAA, FDA, EPA, OMB, and OSTP to answer questions. There are many people on this message – we probably need to have some limit on the numbers on the call. We should also do a quick agenda. I will work with OMB on that and circulate. Thanks, Monica

From: McCarthy, Nell [mailto:Nell_McCarthy@who.eop.gov]
Sent: Friday, May 28, 2010 11:36 AM
To: Fitzpatrick, Michael A.; Cuellar, Mariano-Florentino; Mancini, Dominic J.; Malanoski, Margaret A.; Rostker, David; Perraut, Andrew B.; Stebbins, Michael J.; Schmeissner, Peter J.; Murawski, Steve; Mike.Taylor@fda.hhs.gov; Hansen, Timothy; Wilson, Steven; Lugo, Lauren; Rapp, John; Sarri, Kristen; Medina, Monica; Donald.Kraemer@fda.hhs.gov; Dickey, Robert W; Boots, Michael J.; Higginbottom, Heather A.; Onek, Matthew M.; Monje, Carlos A.; Weatherly, Mark A.; Lyon, Randolph M.; Reilly, Thomas M.; Fontenot, Keith J.; Garufi, Marc; Levenbach, Stuart; Frey, Nathan J.; Molly.Muldoon@fda.hhs.gov; Dora.Hughes@hhs.gov; Michael.Landa@fda.hhs.gov; Buffa, Nicole; Neyland, Kevin F.; Hagan, Michael B.; Hart, Nicholas R.; Weiss, Michael I.; Monica Medina; Palm, Mary E.; Usha Varanasi; Davenport, Joanne Chow; Bigler.Jeff@epamail.epa.gov; Linda Chaves; Barringer, Jody M.; Uhlenbrock, Kristan M.; Engle.Virginia@epamail.epa.gov; Bolger, Philip M; Fong, Tera L.; Washington.Evelyn@epa.gov; Ohanian.Edward@epamail.epa.gov; Evelyn Washington/DC/USEPA/US; Radosevich, Tara J.; Malhotra, Stefan; Schoeny.Rita@epa.gov; Kimani Kimbrough; Koufopoulos, Peter N; John E. Stein; Walton Dickhoff; Gilson, Shannon; Justin Kenney; Beck, Nancy
Subject: Seafood Safety communication call

Thanks for joining this morning's call.

Our short term timeline is:

--Tuesday morning, 10am: NOAA and FDA send to Nell McCarthy, nell_mccarthy@who.eop.gov, information for a Fact Sheet and Talking Points. The Fact Sheet will be issued by NOAA, FDA, and EPA and be directed to consumers and fisherman, include a simple description of the protocol, the operational plan for implementing the protocol and testing fish. The Talking Points will include the topline safety message and agency roles and Q&A on issues that were raised on last night's call, including dispersant testing & toxicity, buffer areas & surveillance plan, sensory testing accuracy, underwater plumes & migratory fish, PAH baseline levels, Mussel Watch, and state reopenings.

--Tuesday COB: NOAA and FDA will send to Nell McCarthy a draft timeline of USG action.

--Tuesday COB: FDA and EPA seek agreement on toxicity data.

--Tuesday COB: Fact Sheet & TPs are recirculated to agencies.

--Wednesday 10am: Agency comments on Fact Sheet & TPs due.

--Wednesday: Fact Sheet & TPs are cleared through EOP.

If you have any existing information that you can share before Tuesday morning, please send it to me.

Thanks,

Nell

Nell McCarthy

Domestic Policy Council

office 202.456.3376

mobile 202.503.5686

nell_mccarthy@who.eop.gov

Received(Date): Fri, 28 May 2010 13:21:18 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: Re: seafood safety call with states
To: "Medina, Monica" <Monica.Medina@noaa.gov>,"'Shaun_L._McGrath@who.eop.gov'" <Shaun_L._McGrath@who.eop.gov>,"'Nell_McCarthy@who.eop.gov'" <Nell_McCarthy@who.eop.gov>,"'Michael_A._Fitzpatrick@omb.eop.gov'" <Michael_A._Fitzpatrick@omb.eop.gov>,"'Mariano-Florentino_Cuellar@who.eop.gov'"<Mariano-Florentino_Cuellar@who.eop.gov>,"'Dominic_J._Mancini@omb.eop.gov'" <Dominic_J._Mancini@omb.eop.gov>,"'Margaret_A._Malanoski@omb.eop.gov'" <Margaret_A._Malanoski@omb.eop.gov>,"'David_Rostker@omb.eop.gov'" <David_Rostker@omb.eop.gov>,"'Andrew_B._Perraut@omb.eop.gov'" <Andrew_B._Perraut@omb.eop.gov>,"'William.R.Grawe@uscg.dhs.gov'" <William.R.Grawe@uscg.dhs.gov>,"'Michael_J._Stebbins@ostp.eop.gov'" <Michael_J._Stebbins@ostp.eop.gov>,"'Peter_J._Schmeissner@ostp.eop.gov'" <Peter_J._Schmeissner@ostp.eop.gov>,"Murawski, Steve" <Steve.Murawski@noaa.gov>,"'Mike.Taylor@fda.hhs.gov'" <Mike.Taylor@fda.hhs.gov>,"Hansen, Timothy" <Timothy.Hansen@noaa.gov>,"Wilson, Steven" <Steven.Wilson@noaa.gov>,"Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"'Donald.Kraemer@fda.hhs.gov'" <Donald.Kraemer@fda.hhs.gov>,"'Robert.Dickey@fda.hhs.gov'" <Robert.Dickey@fda.hhs.gov>,"'Michael_J._Boots@ceq.eop.gov'" <Michael_J._Boots@ceq.eop.gov>,"'Heather_A._Higginbottom@who.eop.gov'" <Heather_A._Higginbottom@who.eop.gov>,"'Matthew_M._Onek@who.eop.gov'" <Matthew_M._Onek@who.eop.gov>,"'Carlos_A._Monje@who.eop.gov'" <Carlos_A._Monje@who.eop.gov>,"'Mark_A._Weatherly@omb.eop.gov'" <Mark_A._Weatherly@omb.eop.gov>,"'Randolph_M._Lyon@omb.eop.gov'" <Randolph_M._Lyon@omb.eop.gov>,"'Thomas_M._Reilly@omb.eop.gov'" <Thomas_M._Reilly@omb.eop.gov>,"'Keith_J._Fontenot@omb.eop.gov'" <Keith_J._Fontenot@omb.eop.gov>,"'Marc_Garufi@omb.eop.gov'" <Marc_Garufi@omb.eop.gov>,"'Stuart_Levenbach@omb.eop.gov'" <Stuart_Levenbach@omb.eop.gov>,"'Nathan_J._Frey@omb.eop.gov'" <Nathan_J._Frey@omb.eop.gov>
Cc: "Belton, Linda" <Linda.Belton@noaa.gov>, "Ramos, William" <WRamos@doc.gov>

Adding in William Ramos. Thanks.

From: Monica Medina <monica.medina@noaa.gov>
To: McGrath, Shaun L. <Shaun_L._McGrath@who.eop.gov>; Medina, Monica; McCarthy, Nell <Nell_McCarthy@who.eop.gov>; Fitzpatrick, Michael A. <Michael_A._Fitzpatrick@omb.eop.gov>; Cuellar, Mariano-Florentino <Mariano-Florentino_Cuellar@who.eop.gov>; Mancini, Dominic J. <Dominic_J._Mancini@omb.eop.gov>; Malanoski, Margaret A. <Margaret_A._Malanoski@omb.eop.gov>; Rostker, David <David_Rostker@omb.eop.gov>; Perraut, Andrew B. <Andrew_B._Perraut@omb.eop.gov>; Grawe, William <William.R.Grawe@uscg.dhs.gov>; Stebbins, Michael J. <Michael_J._Stebbins@ostp.eop.gov>; Schmeissner, Peter J. <Peter_J._Schmeissner@ostp.eop.gov>; Murawski, Steve; Mike.Taylor@fda.hhs.gov <Mike.Taylor@fda.hhs.gov>; Hansen, Timothy; Wilson, Steven; Lugo, Lauren; Rapp, John; Sarri, Kristen; Donald.Kraemer@fda.hhs.gov <Donald.Kraemer@fda.hhs.gov>; Dickey, Robert W <Robert.Dickey@fda.hhs.gov>; Boots, Michael J. <Michael_J._Boots@ceq.eop.gov>; Higginbottom, Heather A. <Heather_A._Higginbottom@who.eop.gov>; Onek, Matthew M. <Matthew_M._Onek@who.eop.gov>; Monje, Carlos A. <Carlos_A._Monje@who.eop.gov>; Weatherly, Mark A. <Mark_A._Weatherly@omb.eop.gov>; Lyon, Randolph M. <Randolph_M._Lyon@omb.eop.gov>; Reilly, Thomas M. <Thomas_M._Reilly@omb.eop.gov>; Fontenot, Keith J. <Keith_J._Fontenot@omb.eop.gov>; Garufi, Marc <Marc_Garufi@omb.eop.gov>; Levenbach, Stuart <Stuart_Levenbach@omb.eop.gov>; Frey, Nathan J. <Nathan_J._Frey@omb.eop.gov>;

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Cc: Belton, Linda
Sent: Fri May 28 13:02:10 2010
Subject: RE: seafood safety call with states

Excellent thanks! Will keep them looped in. Plus am adding the nic folks Juliette suggested.

From: McGrath, Shaun L. [mailto:Shaun_L._McGrath@who.eop.gov]
Sent: Friday, May 28, 2010 12:58 PM
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From: McCarthy, Nell [mailto:Nell_McCarthy@who.eop.gov]
Sent: Friday, May 28, 2010 11:36 AM
To: Fitzpatrick, Michael A.; Cuellar, Mariano-Florentino; Mancini, Dominic J.; Malanoski, Margaret A.; Rostker, David; Perraut, Andrew B.; Stebbins, Michael J.; Schmeissner, Peter J.; Murawski, Steve; Mike.Taylor@fda.hhs.gov; Hansen, Timothy; Wilson, Steven; Lugo, Lauren; Rapp, John; Sarri, Kristen; Medina, Monica; Donald.Kraemer@fda.hhs.gov; Dickey, Robert W; Boots, Michael J.; Higginbottom, Heather A.; Onek, Matthew M.; Monje, Carlos A.; Weatherly, Mark A.; Lyon, Randolph M.; Reilly, Thomas M.; Fontenot, Keith J.; Garufi, Marc; Levenbach, Stuart; Frey, Nathan J.; Molly.Muldoon@fda.hhs.gov; Dora.Hughes@hhs.gov; Michael.Landa@fda.hhs.gov; Buffa, Nicole; Neyland, Kevin F.; Hagan, Michael B.; Hart, Nicholas R.; Weiss, Michael I.; Monica Medina; Palm, Mary E.; Usha Varanasi; Davenport, Joanne Chow; Bigler.Jeff@epamail.epa.gov; Linda Chaves; Barringer, Jody M.; Uhlenbrock, Kristan M.; Engle.Virginia@epamail.epa.gov; Bolger, Philip M; Fong, Tera L.; Washington.Evelyn@epa.gov; Ohanian.Edward@epamail.epa.gov; Evelyn Washington/DC/USEPA/US; Radosevich, Tara J.; Malhotra, Stefan; Schoeny.Rita@epa.gov; Kimani Kimbrough; Koufopoulos, Peter N; John E. Stein; Walton Dickhoff; Gilson, Shannon; Justin Kenney; Beck, Nancy
Subject: Seafood Safety communication call

Thanks for joining this morning's call.

Our short term timeline is:

--Tuesday morning, 10am: NOAA and FDA send to Nell McCarthy, nell_mccarthy@who.eop.gov, information for a Fact Sheet and Talking Points. The Fact Sheet will be issued by NOAA, FDA, and EPA and be directed to consumers and fisherman, include a simple description of the protocol, the operational plan for implementing the protocol and testing fish. The Talking Points will include the topline safety message and agency roles and Q&A on issues that were raised on last night's call, including dispersant testing & toxicity, buffer areas & surveillance plan, sensory testing accuracy, underwater plumes & migratory fish, PAH baseline levels, Mussel Watch, and state reopenings.

--Tuesday COB: NOAA and FDA will send to Nell McCarthy a draft timeline of USG action.

--Tuesday COB: FDA and EPA seek agreement on toxicity data.

--Tuesday COB: Fact Sheet & TPs are recirculated to agencies.

--Wednesday 10am: Agency comments on Fact Sheet & TPs due.

--Wednesday: Fact Sheet & TPs are cleared through EOP.

If you have any existing information that you can share before Tuesday morning, please send it to me.

Thanks,

Nell

Nell McCarthy

Domestic Policy Council

office 202.456.3376

mobile 202.503.5686

nell_mccarthy@who.eop.gov

Received(Date): Fri, 28 May 2010 10:59:21 -0700
From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
Subject: Re: Corexit - The Eagle has landed!
To: john rapp <John.Rapp@noaa.gov>
Chain of Custody Form.pdf

John: I have attached a pdf of the Chain of Custody, which needs to be included in the shipment from Nalco. Thanks - Walt

On 5/28/10 4:44 AM, john rapp wrote:

> We have 2 liters of each dispersant in MS and I talked to Seattle yesterday and their preference is to have a full 2 of each as well. So I'm just going to contact Nalco, get Seattle 4 liters, and put this issue to bed.
>
> John

> **From**: Monica Medina <monica.medina@noaa.gov>
> **To**: 'rsiger@doc.gov' <rsiger@doc.gov>; 'Steve.Murawski@noaa.gov' <Steve.Murawski@noaa.gov>; 'Monica.Medina@noaa.gov' <Monica.Medina@noaa.gov>; 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'margaret.spring@noaa.gov' <margaret.spring@noaa.gov>; 'Chris.Beaverson@noaa.gov' <Chris.Beaverson@noaa.gov>; 'John.Oliver@noaa.gov' <John.Oliver@noaa.gov>; 'Usha.Varanasi@noaa.gov' <Usha.Varanasi@noaa.gov>; 'Spencer.Garrett@noaa.gov' <Spencer.Garrett@noaa.gov>; 'Walton.W.Dickhoff@noaa.gov' <Walton.W.Dickhoff@noaa.gov>
> **Cc**: 'KSarri@doc.gov' <KSarri@doc.gov>
> **Sent**: Fri May 28 07:32:59 2010
> **Subject**: Re: Corexit - The Eagle has landed!
>
> Two liters is a start but I thought we needed 8.

> **From**: Siger, Rick <RSiger@doc.gov>
> **To**: Murawski, Steve <Steve.Murawski@noaa.gov>; Medina, Monica <Monica.Medina@noaa.gov>; Rapp, John <John.Rapp@noaa.gov>; Spring, Margaret <Margaret.Spring@noaa.gov>; Beaverson, Chris <Chris.Beaverson@noaa.gov>; Oliver, John <John.Oliver@noaa.gov>; Varanasi, Usha <Usha.Varanasi@noaa.gov>; Garrett, Spencer <Spencer.Garrett@noaa.gov>; Dickhoff, Walton <Walton.W.Dickhoff@noaa.gov>
> **Cc**: Sarri, Kristen <KSarri@doc.gov>
> **Sent**: Fri May 28 07:11:23 2010
> **Subject**: RE: Corexit - The Eagle has landed!
>
> Adding Kris Sarri who has been working this issue from DOC.

From: Steve Murawski [Steve.Murawski@noaa.gov]
Sent: Thursday, May 27, 2010 11:15 PM
To: Medina, Monica; Rapp, John; Spring, Margaret; Beaverson, Chris; Oliver, John; Siger, Rick; Varanasi, Usha; Garrett, Spencer; Dickhoff, Walton
Subject: Corexit - The Eagle has landed!

See Below, I believe we now have two liters in the lock box in Pascagoula, which will be shared with Seattle. If I have this wrong Walt, Usha, Spencer, please let us know

-Steve

-------- Original Message --------

Subject: Re: Fwd: [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]]]
Date: Thu, 27 May 2010 20:08:29 -0700
From: Gary Shigenaka <Gary.Shigenaka@noaa.gov>
To: Steve Murawski <Steve.Murawski@noaa.gov>
CC: Nicolle.R.Rutherford@noaa.gov, timothy.gallagher@noaa.gov, John Oliver <John.Oliver@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>, "Dave.Westerholm" <Dave.Westerholm@noaa.gov>, "william.conner" <William.Conner@noaa.gov>
References: <f669378a2f297e23.4bfebc8b@noaa.gov> <4BFF3280.9080907@noaa.gov> <4BFF3325.2090402@noaa.gov>

Hi Steve,

If I understand the email chain here, Walt says that he is covered.

gs

Steve Murawski wrote:
> Gary,
>
> Is part of this going to Seattle to Usha and Walt D.?
>
> thanks
>
> Steve
>
> Gary Shigenaka wrote:
>> Nicolle,
>>
>> I'm very glad that the "missing" Corexit samples were found safely in
>> possession of the intended recipients. I'm also glad that you

let me
>> know, since we had a meeting in the command post last night on
this
>> subject and would have been diverted on a tangent had you not
clued
>> us in! I believe Greg Baker has also been in contact with the
NMFS
>> folks and can be the POC for future inquiries.
>>
>> Thanks again for shepherding the shipment. Now go home and get
some
>> rest.
>>
>> gs
>>
>> Nicolle.R.Rutherford@noaa.gov wrote:
>>> They found them.
>>>
>>> Nicolle
>>>
>>> ---
>>>
>>>
>>> Subject:
>>> [Fwd: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
Request]]]
>>> From:
>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>> Date:
>>> Thu, 27 May 2010 14:04:33 -0500
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>>
>>> To:
>>> John Rapp <John.Rapp@noaa.gov>
>>> CC:
>>> "Walker, Calvin C. " <Calvin.Walker@noaa.gov>, Nancy Thompson
>>> <Nancy.Thompson@noaa.gov>, Lisa Desfosse
<Lisa.Desfosse@noaa.gov>,
>>> Tony Lowery <Tony.Lowery@noaa.gov>, Angela Ruple
>>> <Angela.Ruple@noaa.gov>, Cheryl Lassitter
>>> <Cheryl.Lassitter@noaa.gov>, Emille Cole
<Emille.Cole@noaa.gov>,
>>> Nicolle R Rutherford usha <Nicolle.R.Rutherford@noaa.gov>,
Walton
>>> Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>>
>>>
>>> John et al-- the dispersant's have been received by NSIL with
the
>>> sealed container intact --the products are in good condition --
and--
>>> the Chain Of Custody (COC) documents being in correct order--
the
>>> samples have been entered into our Laboratory COC process and
is
>>> being held appropriately in a locked cabinet within a locked

room--
>>> the volume meets our needs--thanks for all of the help you
have
>>> given us in procuring these samples--Regards--Spencer
>>>
>>> -------- Original Message --------
>>> Subject: Re: FW: [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 &
9527
>>> Request]]
>>> Date: Thu, 27 May 2010 11:04:39 -0700
>>> From: Walton Dickhoff <Walton.W.Dickhoff@noaa.gov>
>>> To: Calvin Walker <Calvin.Walker@noaa.gov>
>>> CC: Steven Wilson <Steven.Wilson@noaa.gov>,
>>> Spencer.Garrett@noaa.gov, 'Tony Lowery' <Tony.Lowery@noaa.gov>
>>> References:
<007501cafdc4$7c582810$75087830$%Wilson@noaa.gov>
>>> <4BFEB12C.3080007@noaa.gov>
>>>
>>>
>>>
>>> Calvin:
>>> John Rapp just called me about this, so I think we are squared
>>> away. Thanks -Walt
>>>
>>> On 5/27/10 10:51 AM, Calvin Walker wrote:
>>>> NWFSC will also need analytical reference stds, some for
analytical
>>>> methods development, and for toxicity studies.
>>>>
>>>> Walt---how much is needed?
>>>>
>>>> On 5/27/2010 12:46 PM, Steven Wilson wrote:
>>>>>
>>>>> We need to make sure we have reference vials for the State
>>>>> training in sensory as well as to use for spiking samples if
>>>>> necessary. 2L should suffice but please ask Bobby to be
sure.
>>>>>
>>>>>
>>>>>
>>>>> Steven
>>>>>
>>>>>
>>>>>
>>>>> *From:* John Rapp [mailto:John.Rapp@noaa.gov]
>>>>> *Sent:* Thursday, May 27, 2010 1:35 PM
>>>>> *To:* nmfs.seafood.safety.dwh@noaa.gov
>>>>> *Subject:* [Fwd: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527
Request]]
>>>>>
>>>>>
>>>>>
>>>>> Please respond ASAP or by 2 PM (Eastern).
>>>>> -------- Original Message --------
>>>>>
>>>>> *Subject: *
>>>>>

>>>>>
>>>>> Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>>
>>>>> *Date: *
>>>>>
>>>>>
>>>>> Thu, 27 May 2010 13:09:45 -0400
>>>>>
>>>>> *From: *
>>>>>
>>>>>
>>>>> John Rapp <John.Rapp@noaa.gov> <mailto:John.Rapp@noaa.gov>
>>>>>
>>>>> *To: *
>>>>>
>>>>>
>>>>> Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>>
>>>>> *CC: *
>>>>>
>>>>>
>>>>> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>,
Nancy.Thompson@noaa.gov
>>>>> <mailto:Nancy.Thompson@noaa.gov>, Calvin.Walker@noaa.gov
>>>>> <mailto:Calvin.Walker@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>,
LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov>
<mailto:LaShonda.Finch@noaa.gov>,
>>>>> Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>,
>>>>> Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>,
>>>>> James.M.Nance@noaa.gov <mailto:James.M.Nance@noaa.gov>,
>>>>> Dave.Westerholm@noaa.gov <mailto:Dave.Westerholm@noaa.gov>,
>>>>> David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov>,
>>>>> timothy.gallagher@noaa.gov
<mailto:timothy.gallagher@noaa.gov>
>>>>>
>>>>> *References: *
>>>>>
>>>>>
>>>>> <2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <mailto:2c38ba12c39d7a.2c39d7a2c38ba1@noaa.gov>
>>>>> <4BFE7A04.3010503@noaa.gov>
<mailto:4BFE7A04.3010503@noaa.gov>
>>>>> <f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <mailto:f4991a3235eb9d7.4bfe426e@noaa.gov>
>>>>> <4BFEA61C.2080802@noaa.gov>
<mailto:4BFEA61C.2080802@noaa.gov>
>>>>>
>>>>>
>>>>>
>>>>> Spencer,
>>>>>
>>>>> Since you have received 2 L of each dispersant, is that a
>>>>> sufficient volume to do all planned work for seafood safety?

DOC,
>>>>> in particular, wants to know the exact needs of your lab so
>>>>> testing proceeds with all necessary resources. Further, the
USG
>>>>> overall is looking for assurance that there will be no lags
in
>>>>> implementation, so I again ask for input on what's needed to
keep
>>>>> this ball rolling. Thanks,
>>>>> John
>>>>>
>>>>> Spencer Garrett wrote:
>>>>> > Thanks for the info--Emille please track down--esg
>>>>> > > Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> wrote:
>>>>> >> Package was delivered Tuesday, 25 May 2010 at 10:08 am.
It was
>>>>> >> signed for by C. Bergman.
>>>>> >> Nicolle
>>>>> >> >> >> >> >> ----- Original Message -----
>>>>> >> From: Spencer Garrett <Spencer.Garrett@noaa.gov>
>>>>> <mailto:Spencer.Garrett@noaa.gov>
>>>>> >> Date: Thursday, May 27, 2010 6:54 am
>>>>> >> Subject: Re: Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >> To: Nancy.Thompson@noaa.gov
<mailto:Nancy.Thompson@noaa.gov>
>>>>> >> Cc: Calvin.Walker@noaa.gov
<mailto:Calvin.Walker@noaa.gov>,
>>>>> Emille Cole <Emille.Cole@noaa.gov>
<mailto:Emille.Cole@noaa.gov>,
>>>>> >> Nicolle.R.Rutherford@noaa.gov
>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov>, Emille Cole
>>>>> <Emille.Cole@noaa.gov> <mailto:Emille.Cole@noaa.gov>, >>
LaShonda
>>>>> Finch <LaShonda.Finch@noaa.gov>
<mailto:LaShonda.Finch@noaa.gov>
>>>>> >> >> >> >>> not to my knowledge having it checked now--
Nicolle
>>>>> pls verify FEDEX >>> tracking #'s--Regards--Spencer
>>>>> >>> >>> Nancy.Thompson@noaa.gov
<mailto:Nancy.Thompson@noaa.gov>
>>>>> wrote:
>>>>> >>>   >>>> do we have this? >>>>
>>>>> ---
>>>>> >>>> >>>> >>>> Subject:
>>>>> >>>> Fwd: [Fwd: Re: Corexit 9500 & 9527 Request]
>>>>> >>>> From:
>>>>> >>>> John Rapp <John.Rapp@noaa.gov>
<mailto:John.Rapp@noaa.gov>
>>>>> >>>> Date:
>>>>> >>>> Thu, 27 May 2010 06:57:47 -0400
>>>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>
>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> To:
>>>>> >>>> Steve Murawski <Steve.Murawski@noaa.gov>

>>>>> <mailto:Steve.Murawski@noaa.gov>, Nancy Thompson >>>>
>>>>> <Nancy.Thompson@noaa.gov> <mailto:Nancy.Thompson@noaa.gov>
>>>>> >>>> >>>> >>>> Corexit was shipped Monday. Since Dr.
Garrett
>>>>> hasn't received it, >>>> >>> has >>>> he followed
up with
>>>>> niccole. Seems like we should be able to track >>>>
>>>
>>>>> the >>>> package.
>>>>> >>>> >>>> John
>>>>> >>>> >>>> >>>> Begin forwarded message:
>>>>> >>>> >>>> >>>>> *From:* "Nicolle.R.Rutherford"
>>>>> <Nicolle.R.Rutherford@noaa.gov
>>>>>> <mailto:Nicolle.R.Rutherford@noaa.gov> <>>
>>>>> >>>>> *Date:* May 26, 2010 11:11:59 PM EDT
>>>>> >>>>> *To:* Mary Gill <Mary.Gill@noaa.gov
>>>>>> <mailto:Mary.Gill@noaa.gov> <>>
>>>>> >>>>> *Cc:* Gary Shigenaka <Gary.Shigenaka@noaa.gov
>>>>>> <mailto:Gary.Shigenaka@noaa.gov> <>>, Randy J TeBeest >>>>>
>>>>> <Randy.J.Tebeest@noaa.gov <mailto:Randy.J.Tebeest@noaa.gov>
<>>,
>>>>> Jordan Stout <Jordan.Stout@noaa.gov
<mailto:Jordan.Stout@noaa.gov>
>>>>> > <mailto:Jordan.Stout@noaa.gov>>>>> <>>, Ed Levine
>>>>> <Ed.Levine@noaa.gov <mailto:Ed.Levine@noaa.gov> <>>, Dave
>>>>> Westerholm >>>>> <Dave.Westerholm@noaa.gov
>>>>>> <mailto:Dave.Westerholm@noaa.gov> <>>, David Kennedy >>>>>
>>>>> <David.Kennedy@noaa.gov <mailto:David.Kennedy@noaa.gov> <>>,
John
>>>>> Rapp <John.Rapp@noaa.gov <mailto:John.Rapp@noaa.gov> <>>,
>>>>>
>>>>> dwh.staff@noaa.gov <mailto:dwh.staff@noaa.gov> <>, Timothy
>>>>> Gallagher >>>>> <timothy.gallagher@noaa.gov
>>>>>> <mailto:timothy.gallagher@noaa.gov> <>>
>>>>> >>>>> *Subject:* *[Fwd: Re: Corexit 9500 & 9527 Request]*
>>>>> >>>>> >>>>> Hi Mary,
>>>>> >>>>> A request for two liters each of Corexit 9500 and 9527
was
>>>>> made by >>>>> NMFS through Tim Gallagher and was
acted on
>>>>> two days ago. >>>>> See below. I have not received
confirmation
>>>>> from Dr. Garrett that >>>>> the samples were
received,
>>>>> although the samples should >>>>> have been >>>
>>>>> received >>>>> yesterday. The request was for only two
liters
>>>>> of each of the >>>>> dispersants, not four.
>>>>> >>>>> >>>>> Nicolle
>>>>> >>>>> >>>>> -------- Original Message --------
>>>>> >>>>> Subject: Re: Corexit 9500 & 9527 Request
>>>>> >>>>> Date: Mon, 24 May 2010 14:43:44 -0700
>>>>> >>>>> From: Nicolle.R.Rutherford
>>>>> <nicolle.r.rutherford@noaa.gov
>>>>>> <mailto:nicolle.r.rutherford@noaa.gov> <>>
>>>>> >>>>> To: Spencer Garrett <Spencer.Garrett@noaa.gov
>>>>>> <mailto:Spencer.Garrett@noaa.gov> <>>

>>>>> >>>>> CC: Tim Gallagher <timothy.gallagher@noaa.gov >>>>> <mailto:timothy.gallagher@noaa.gov> <>>, Gary >>>>> Shigenaka
>>>>> <Gary.Shigenaka@noaa.gov <mailto:Gary.Shigenaka@noaa.gov>
<>>
>>>>> >>>>> References: <4BF5B114.9010405@noaa.gov >>>>> <mailto:4BF5B114.9010405@noaa.gov> <>>
>>>>> >>>>> >>>>> >>>>> >>>>> Hello Dr. Garrett,
>>>>> >>>>> I just FedExed a cooler containing two liters each of
>>>>> Corexit 9500 >>>>> >>> and >>>>> 9527 to you for use as
>>>>> part of the sensory analysis program. The >>>>> >>>
>>>>> cooler >>>>> should arrive by noon tomorrow. When it arrives,
>>>>> please confirm >>>>> >>> that >>>>> you have received it.
>>>>> >>>>> >>>>> If you have any questions or concerns, please don't
>>>>> hesitate to >>>>> >>> call or >>>>> email.
>>>>> >>>>> >>>>> Cheers,
>>>>> >>>>> Nicolle Rutherford
>>>>> >>>>> Biologist
>>>>> >>>>> Emergency Response Division
>>>>> >>>>> National Oceanic and Atmospheric Administration (NOAA)
>>>>> >>>>> 206-300-2994
>>>>> >>>>> >>>>>> >>>>>
>>

Northwest Fisheries Science Center
Environmental Conservation Division

CHAIN OF CUSTODY FORM

(Use ball point pen only)

Form No. :	

PROJECT or CASE TITLE AND REMARKS:

DATE SAMPLES COLLECTED:	SAMPLE CUSTODIAN:

ITEM NO.	SAMPLE TYPE/PURPOSE	SAMPLE ID NUMBERS	SAMPLE CONTAINER	TOTAL NUMBER OF SAMPLES
1				
Comments			Continued from Form No: Item No. from previous form	
2				
Comments			Continued from Form No: Item No. from previous form	
3				
Comments			Continued from Form No: Item No. from previous form	
4				
Comments			Continued from Form No: Item No. from previous form	
5				
Comments			Continued from Form No: Item No. from previous form	

TRANSFER SIGNATURES

ITEM NO:	FROM: PRINT NAME, AGENCY	RELEASE SIGNATURE:	RELEASE DATE:	DELIVERED VIA: ☐ IN PERSON ☐ FED EX ☐ OTHER
	TO: PRINT NAME, AGENCY	RECEIPT SIGNATURE:	RECEIPT DATE:	Sample Condition/Comments
ITEM NO:	FROM: PRINT NAME, AGENCY	RELEASE SIGNATURE:	RELEASE DATE:	DELIVERED VIA: ☐ IN PERSON ☐ FED EX ☐ OTHER
	TO: PRINT NAME, AGENCY	RECEIPT SIGNATURE:	RECEIPT DATE:	Sample Condition/Comments
ITEM NO:	FROM: PRINT NAME, AGENCY	RELEASE SIGNATURE:	RELEASE DATE:	DELIVERED VIA: ☐ IN PERSON ☐ FED EX ☐ OTHER
	TO: PRINT NAME, AGENCY	RECEIPT SIGNATURE:	RECEIPT DATE:	Sample Condition/Comments
ITEM NO:	FROM: PRINT NAME, AGENCY	RELEASE SIGNATURE:	RELEASE DATE:	DELIVERED VIA: ☐ IN PERSON ☐ FED EX ☐ OTHER
	TO: PRINT NAME, AGENCY	RECEIPT SIGNATURE:	RECEIPT DATE:	Sample Condition/Comments
ITEM NO:	FROM: PRINT NAME, AGENCY	RELEASE SIGNATURE:	RELEASE DATE:	DELIVERED VIA: ☐ IN PERSON ☐ FED EX ☐ OTHER
	TO: PRINT NAME, AGENCY	RECEIPT SIGNATURE:	RECEIPT DATE:	Sample Condition/Comments

Document ID: 0.7.19.1331.1

Received(Date): Fri, 28 May 2010 15:38:05 -0400
From: Tony Penn <Tony.Penn@noaa.gov>
Subject: NRDA update
To: dwh.staff@noaa.gov
NRDA status update 5-27-10.doc

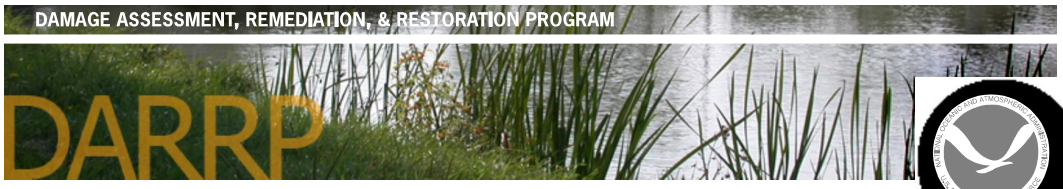
Good afternoon. I don't have a presentation today, but I do have some bullets (and attachments) that might be of interest. These all fall within the category of outreach.

1) NOAA staff, in coordination with DOI, will provide a briefing on the NRDA process to the Staff Leads of the Louisiana-Mississippi Ecosystem Restoration Working Group, as well as additional staff from CEQ and OMB on Tuesday June 1 at 12:00 pm EDT. Potential implications of the spill on Roadmap activities, as well as potential synergies between the two activities, will also be discussed.

2) NOAA Sea Grant along with State partners have organized community meetings next week June 1 - 3 in Biloxi, Mobile, and Slidell to provide a forum for discussions on the Deepwater Horizon oil spill. The goal of the meetings is to answer relevant local, state and regional questions by State and Federal partners and agencies to empower coastal citizens to make informed personal and community decisions regarding the Deepwater Horizon spill. Members of NOAA's NRDA team will participate in these meetings to discuss injury assessment, restoration planning, and the NRDA process.

3) NOAA's Damage Assessment, Remediation, and Restoration Program has cleared the attached fact sheets. They are coming up through the Line Offices for NOAA clearance. The first file is a general description of NOAA's NRDA work on the Deepwater Horizon spill. The second file is a general description of the NRDA process. The third file provides a detailed description of work that has been conducted or that is planned for the Deepwater Horizon NRDA.

Thanks,
Tony


DAMAGE ASSESSMENT, REMEDIATION, & RESTORATION PROGRAM
DARRP
Office of Response and Restoration • Office of Habitat Conservation • General Counsel for Natural Resources

DAMAGE ASSESSMENT, REMEDIATION, & RESTORATION PROGRAM

DARRP

Office of Response and Restoration • Office of Habitat Conservation • General Counsel for Natural Resources

Oil Spills: NOAA Assessment and Restoration

Under the Oil Pollution Act of 1990, a Natural Resource Damage Assessment is the legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of an oil spill.

Key Facts

- **NOAA's Role?** NOAA is the lead federal trustee for protection and restoration of coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.
- **How Many Spills?** NOAA responds to up to 150 oil spills of all sizes each year.
- **Past Success?** In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- **Who Benefits?** Restoration of wetlands, coral and shellfish reefs, beaches and rivers benefit coastal communities that rely on vibrant fisheries and thriving wildlife for recreation, tourism, and food.

How We Work

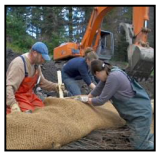
NOAA works cooperatively with other natural resource trustees and, when possible, the party responsible for the pollution. The Damage Assessment process promotes cost-effective assessment and restoration—benefiting the public, the responsible party, and the environment.



On April 22, 2010, the oil rig Deepwater Horizon MC252 sank off the coast of Louisiana, resulting in a leak of millions of gallons of oil from the well approximately a mile below the surface of the ocean.









NOAA acts as a trustee on behalf of the public to restore coastal and marine resources injured by oil spills and hazardous substance releases, and vessel groundings.

After an Oil Spill: What Happens Next?

During and after an oil spill, there are three main steps to restore impacted areas:

- **Preassessment:** Determine whether injury to natural resources has occurred. Work includes collecting time-sensitive data, reviewing scientific literature about the oil and its impact on coastal resources and determining the extent and severity of injury.
- **Injury Assessment and Planning:** Scientific and economic studies assess and quantify the injuries and the loss of services. A restoration plan is developed to identify restoration projects.
- **Restoration:** Work with the public and responsible party to select, implement, and monitor restoration projects. The responsible party pays for assessment and restoration costs.

DARRP - Protecting and restoring natural resources nationwide

Document ID: 0.7.19.1056



Deepwater Horizon Oil Spill: NOAA Assessment and Restoration

On April 20, an explosion on the Deepwater Horizon MC252 drilling platform in the Gulf of Mexico caused the rig to sink and oil began leaking into the Gulf. This significant spill poses a serious threat to wildlife and the fishing community along the large coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida. Although it will be months before the full extent of the damage will be known, the spill is impacting the Gulf coastline, and NOAA is acting quickly to begin preliminary assessments and plan for restoration along the coast.

NOAA's Role

To help determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of the spill, a Natural Resource Damage Assessment will be conducted by NOAA. Although many agencies are involved in this process, NOAA is the lead federal trustee for coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.

Key Facts

- NOAA responds to up to 150 oil spills of all sizes each year.
- In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- NOAA and the other trustees involved hold the responsible party accountable for assessment and restoration costs.



Early response to the explosion (photo courtesy U.S. Coast Guard).

Potential Impacts of the Deepwater Horizon Spill

The oil spill is impacting Louisiana's shoreline habitats and fisheries, as well as current and completed restoration projects on the coast.

- Fisheries: During past oil spills in the Gulf of Mexico, NOAA has documented direct toxic impacts to commercially important aquatic life including blue crabs, squid, shrimp and a variety fish species. Toxins in the oil can kill these species or have other harmful effects such as: DNA damage, liver disease, cancer, and reproductive, developmental, and immune system impairment in fish and other organisms
- Habitat: The presence of discharged oil in the environment may cause decreased habitat use in the area, altered migration patterns, altered food availability, and disrupted life cycles. Oiled plants could die, eliminating the roots that help bind and stabilize soil, leading to erosion.
- Restoration: There are many NOAA restoration projects that could be affected by the spill, including two large-scale American Recovery and Reinvestment Act projects.



Vessel skimming oil from the Deepwater Horizon.

NOAA acts as a trustee on behalf of the public to restore coastal and marine resources injured by oil spills and hazardous substance releases, and vessel groundings.

Document ID: 0.7.19.1056.1



Oil in Louisiana wetlands during the Deepwater Horizon Oil Spill, May 2010. Although it will take months to understand the full extent of the impact, NOAA staff are working through preliminary assessments as part of its efforts as a Natural Resource Damage Assessment trustee.

Who are the Trustees?

Trustees protect, manage, and restore the natural resources that are held in trust for current and future generations. Trustees include the U.S. Departments of Commerce, Interior, Defense, Agriculture, and Energy; state agencies; and Native American tribes.

What Happens Now?

During and after an oil spill, there are three main steps to restore impacted areas:

- Preassessment: Determine whether injury to natural resources has occurred. Work includes collecting time-sensitive data, reviewing scientific literature about the oil and its impact on coastal resources, and determining the extent and severity of injury.
- Injury Assessment and Planning: Scientific and economic studies assess and quantify the injuries and the loss of services. A restoration plan is developed to identify restoration projects.
- Restoration: Work with the public and responsible party to select, implement and monitor restoration projects. The responsible party pays for assessment and restoration costs.

Assessing Impacts to Gulf of Mexico Fisheries and Coastal Wetlands



NOAA Administrator Dr. Jane Lubchenco, NOAA Fisheries Assistant Administrator Eric Schwaab, and Council on Environmental Quality Chair Nancy Sutley assess how the sample is processed aboard the Research Vessel Caretta and the chain of custody protocol used when handling specimens associated with the oil spill.

For further information about DARRP, please visit
http://www.darrp.noaa.gov

Document ID: 0.7.19.1056.1



Oil Spills: NOAA Assessment and Restoration

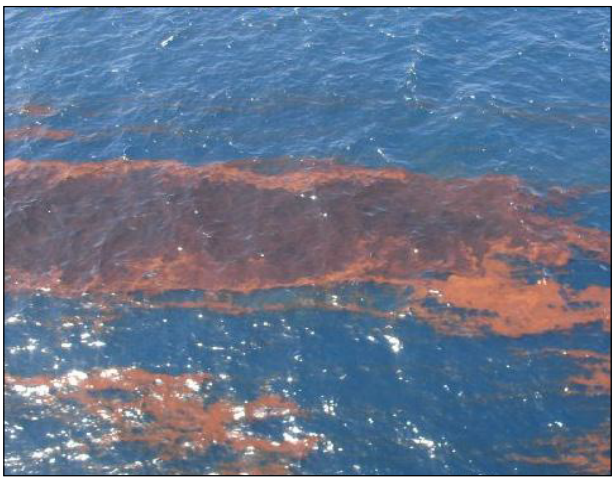
Under the Oil Pollution Act of 1990, a Natural Resource Damage Assessment is the legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of an oil spill.

Key Facts

- NOAA's Role? NOAA is the lead federal trustee for protection and restoration of coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.
- How Many Spills? NOAA responds to up to 150 oil spills of all sizes each year.
- Past Success? In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- Who Benefits? Restoration of wetlands, coral and shellfish reefs, beaches and rivers benefit coastal communities that rely on vibrant fisheries and thriving wildlife for recreation, tourism, and food.

How We Work

NOAA works cooperatively with other natural resource trustees and, when possible, the party responsible for the pollution. The Damage Assessment process promotes cost-effective assessment and restoration—benefiting the public, the responsible party, and the environment.



On April 22, 2010, the oil rig Deepwater Horizon MC252 sank off the coast of Louisiana, resulting in a leak of millions of gallons of oil from the well approximately a mile below the surface of the ocean.









NOAA acts as a trustee on behalf of the public to restore coastal and marine resources injured by oil spills and hazardous substance releases, and vessel groundings.

After an Oil Spill: What Happens Next?

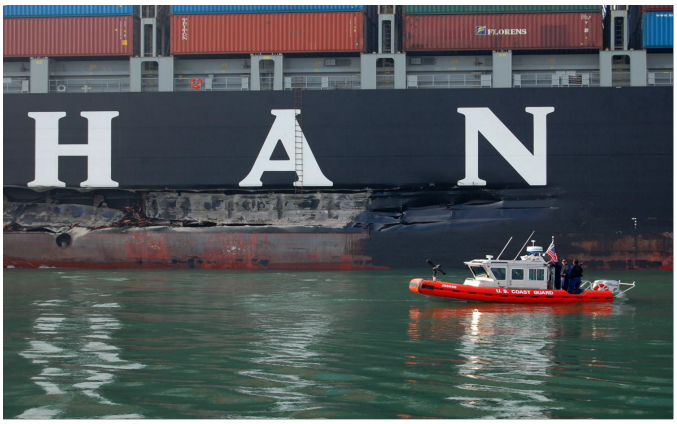
During and after an oil spill, there are three main steps to restore impacted areas:

- Preassessment: Determine whether injury to natural resources has occurred. Work includes collecting time-sensitive data, reviewing scientific literature about the oil and its impact on coastal resources, and determining the extent and severity of injury.
- Injury Assessment and Planning: Scientific and economic studies assess and quantify the injuries and the loss of services. A restoration plan is developed to identify restoration projects.
- Restoration: Work with the public and responsible party to select, implement, and monitor restoration projects. The responsible party pays for assessment and restoration costs.

Document ID: 0.7.19.1056.2

Five Notable Oil Spills of Recent Years

- British Petroleum Deepwater Horizon MC252 Rig, Louisiana: On Earth Day, April 22, 2010, an oil rig in the Gulf of Mexico sank after suffering damages from an explosion and fire two days prior. Millions of gallons of oil have leaked from the well approximately a mile below the surface of the ocean. Preliminary assessments have begun, but response is still underway. It could be months or years before the full extent of the injuries are known and restoration can begin. NOAA is concerned about ongoing and long-term impacts to fish, shellfish, marine mammals, turtles, birds, and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals, and the water column.
- Barge DM932 and Tintomara, Louisiana: In July 2008, the chemical tank ship Tintomara collided with the American Commercial Lines barge DM932 near downtown New Orleans, resulting in a spill of 270,000 gallons of oil. Clean-up of the incident took several months. Injuries are being assessed.
- Cosco Busan, California: In November 2007, the container ship M/V Cosco Busan struck the San Francisco-Oakland Bay Bridge in San Francisco Bay and tore a large gash in the hull of the vessel, and 53,000 gallons of fuel oil were released into the water. The oil spread along many miles of sensitive coastline, including beaches, rocky intertidal habitats, coastal lagoons, and wetlands.
- Chalk Point, Maryland: On April 7, 2000, a leak was detected in an underground pipeline that supplies oil to the Potomac Electric Power Company Chalk Point generating station in Aquasco, Maryland. Approximately 140,000 gallons of fuel oil spilled into Swanson Creek, and about 40 miles of envrionmentally-sensitive downstream creeks and shorelines were oiled as a result. This case was settled in 2002, and the trustees have undertaken a series of restoration projects to address natural resource and lost use injuries associated with the fuel pipeline leak.
- Athos Spill, Delaware, New Jersey and Pennsylvania: In November 2004, the M/T Athos I struck a large, submerged anchor while preparing to dock at a refinery in Paulsboro, New Jersey. The anchor punctured the vessel's bottom, resulting in the discharge of nearly 265,000 gallons of crude oil into the Delaware River and nearby tributaries. Injuries are being assessed. The claim has been submitted to the National Pollution Fund Center for adjudication.



Hole in the Cosco Busan container ship, which spilled 53,000 gallons of oil in San Francisco Bay in 2007.

Deepwater Horizon Spill: Assessing Impacts to Gulf of Mexico Fisheries and Coastal Wetlands





Left: NOAA Administrator Dr. Jane Lubchenco, NOAA Fisheries Assistant Administrator Eric Schwaab, and Council on Environmental Quality Chair Nancy Sutley assess how the sample is processed aboard the Research Vessel Caretta and chain of custody protocol used when handling specimens associated with the oil spill. Right: Scientist Dr. Dennis Apeti, brings up a trawl full of oysters for testing.

For further information about DARRP, please visit
http://www.darrp.noaa.gov

Document ID: 0.7.19.1056.2

NRDA Status Update as of 5/27/10: Information for Public Dissemination

Background: the intent of this is to try to summarize the status of NRDA data collection activities to date (5/27/10) in a digestible form. Once cleared, it will provide factual information that can be packaged for multiple purposes, including: to update NOS, ORR and DARRP websites, and to provide talking points for numerous taskers from Public and Legislative Affairs offices and NOAA and DOC HQ. *Updates should be sent to tom.brosnan@noaa.gov.*

NRDA Status Summary: NOAA and co-trustees continue to collect data in the Gulf of Mexico and across five states that will be useful to determine what natural resources have been injured and what human uses have been lost due to the Deepwater Horizon oil spill. Several technical working groups composed of State and Federal natural resource trustees and representatives from the Responsible Party are gathering historical information and developing and implementing baseline (pre-spill) and post-impact field studies for multiple resource categories. Resources being assessed include fish and shellfish, bottom dwelling biota, birds, marine mammals, turtles, and sensitive habitats such as wetlands, submerged aquatic vegetation, beaches, mudflats, deep and shallow corals, and the water column, including bottom sediments. The Trustees are also collecting and reviewing relevant water column, shoreline, wildlife and other data being collected as part of the response and by other entities. The status of several NRDA activities as of 5/27/10 includes:

1) **Water Column:** the purpose of this effort currently is to document the fate and transport of the oil through the water column and over time, including exposure to fish, shrimp and other aquatic resources.
   a) Baseline (pre-oiling) water quality data for coastal areas of five states (299 samples thus far) have been and continue to be acquired by the trustees. This includes water samples collected in near shore areas and from long-term monitoring sites from NOAA's Musselwatch program (see 3.b., below).
   b) Four recent cruises have provided water column samples from inside and outside of the oil slick for the trustees. Recent cruises were conducted on the *R/V Weatherbird 2* in late April and early May (see 2.b., below), the *M/V Fitz* and the *R/V TDI Brooks McCall* in mid-May. The 5/9-10 *M/V Jack Fitch* cruise conducted water columnn profiling of dissolved aromatic hydrocarbons and free oil droplets at depth. 250 water samples were collected during these cruises and are currently being analyzed for oil parameters. These and other data will be used to calibrate a 3D model of the dispersed oil plume.
   c) At least three additional cruises are currently or are planned to be collecting water samples:
      i) the *TDI Brooks McCall* will be sampling near the wellhead from approximately May 21-28.
      ii) the *M/V Jack Fitz* is currently focusing on collecting water and weathered oil samples in oiled areas.
      iii) the week of May 25, the *Gordon Gunter* will conduct studies in the oil plume (see 2.d., below).
   d) The trustees have also collected source oil samples for analysis and fingerprinting.

2) **Fisheries (Nearshore & Offshore) & Plankton** –the current purpose of this effort is to document what fish and plankton resources are, have been, or could be exposed to the oil.
   a) Historical baseline data on fisheries continues to be assembled.

Document ID: 0.7.19.1056.3

b) An initial cruise on the *R/V Weatherbird 2* in late April collected water and biota data from outside the oiled zone. A 2nd cruise on 5/4 collected data on living marine resources at 32 existing SEAMAP sites off of the FL panhandle (as baseline) and 6 stations in the vicinity of the plume. In addition to adult and larval fish and plankton, water samples were also collected to characterize oil droplet numbers and size in the vicinity of the plume. Samples were also taken for toxicity, stable isotopes, sediments, and bottom dwelling biota.
c) In mid-May, the NOAA ship Gordon Gunter also conducted a survey of fish larvae in the Gulf.
d) Starting the week of May 25, the *Gordon Gunter* will be deployed to use its sonar equipment to map the oil plume. Water samples will be analyzed to confirm sonar readings. SIPPER technology will be used to sample plankton, including fish eggs and larvae, eggs and other plankton.
e) Water sampling at near-surface, intermediate, and near-bottom depths, and oceanographic data gathering (including analyses of physical characteristics such as droplet sizes within the oil plume) have also been conducted on the Jack Fitz. The first cruise returned to Port on May 14th, and the second cruise is currently at sea.

3) **Oysters and other nearshore benthic biota and habitat -** the current purpose of this effort is to document nearshore habitats and biota are, have been, or could be exposed to the oil.
a) Historical baseline data are being assembled on oysters and other nearshore benthic biota and habitats.
b) NOAA Musselwatch: To document pre-oiling conditions, NOAA has collected samples from approximately 50 of NOAA's long-term Musselwatch monitoring stations, from the FL Keys to the Brazos River in TX. Oyster tissues and co-located sediments have been preserved for analysis of oil compounds. Sediments have also been collected indicators of exposure and for analysis of the benthic infaunal community. Water samples have also been collected to potentially document oil contamination and/or ambient pre-spill conditions. These sites may be revisited to document the impact of exposure to oil.
c) Additional plans to assess oysters and bottom -dwelling biota and habitats are being developed.

4) **Submerged Aquatic Vegetation (SAV) –** the current purpose of this effort is to document what SAV habitats are, have been, or could be exposed to the oil.
a) a study plan to assess baseline conditions for SAV should be finalized this week. A second work plan to assess potential impacts to this resource from discharged oil is under development.

5) **Shoreline –** the current purpose of this effort is to document what shoreline habitats (e.g., beaches, mudflats, mangroves, wetlands) are, have been, or could be exposed to the oil.
a) Trustees will assess unoiled and oiled shorelines according to a detailed plan. They will document the spatial extent and degree of oiling on intertidal shoreline habitats. Aerial surveys will be used to produce maps that will provide a general overview of the extent of shoreline oiling. Ground survey teams will build upon these maps to create more detailed shoreline maps that will be used to identify monitoring stations for any subsequent injury assessment studies

Document ID: 0.7.19.1056.3

6) **Birds** – the current purpose of this effort is to document what are, have been, or could be exposed to the oil.
   a) as of 5/18, beached bird survey teams completed their seventh day of surveys on beaches in Florida, Alabama, and Mississippi. The plan is for 10 teams to continue their surveys for 1 month. Workplans to assess pelagic, colonial, marsh and other birds via aerial, boat and other survey methods are being developed.

7) **Marine Mammals & Turtles –** the current purpose of this effort is to document what marine mammal and turtle species are, have been, or could be exposed to the oil.
   a) the Trustees have conducted about 75 marine mammal and turtle aerial surveys by fixed-wing and helicopter to document exposure, acute effects, and potential changes in behavior or distribution. The Trustees have taken over this task from response operations and 35 additional flights are planned from 5/17-7/31.

8) **Shallow-water corals, Deep-water corals** the current purpose of this effort is to document what coral resources are, have been, or could be exposed to the oil.
   a) historical information about the deep and shallow water coral communities is being gathered, as well as any information about their sensitivity to dispersed oil. Assessment plans to document pre- and post-oiling conditions are being developed.

9) **Terrestrial Wildlife** – the current purpose of this effort is to document what terrestrial wildlife are, have been, or could be exposed to the oil.
   a) historical information about terrestrial wildlife communities is being gathered, as well as any information about their sensitivity to oil. A general assessment protocol is being developed.

10) **Human Use -** the current purpose of this effort is to document what human uses of natural resources are, have been, or could be impacted by the oil spill (e.g, recreational fishing, hunting, boating and beach use).
   a) **f**ield teams are conducting user intercept surveys from Louisiana to Florida and boat ramp counts in LA. Overflights are being used to gather beach use information along the Gulf Coast.

11) **Cultural Use –** the current purpose of this effort is to document what human uses of natural resources are, have been, or could be impacted by the oil spill. Existing information about cultural uses is being gathered.

12) **Data Management/GIS Support** – NOAA and the responsible party have agreed to a data workflow process so samples collected for analytical chemistry follow the same means of tracking, chain of custody, QA/QC and data delivery into a unified database for data analysis. NOAA is providing geospatial support through ERMA® (Environmental Response Management Application). The site is being used by the Response and NRDA activities for the common operational picture, data sharing, and sampling activities onshore and offshore. Because of the magnitude of the use for ERMA, NOAA is developing a Public ERMA site which will be available soon.

Document ID: 0.7.19.1056.3

Received(Date): Fri, 28 May 2010 15:55:44 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: template for issues/actions
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
DWH ACTIONS and UPDATES Template.xls

attached

PRIORITY
ISSUES
RESPONSE OPERATIONS - NIC/ICC/NRT
SCIENCE
LMR
NRDA
ASSETS AND PLATFORMS
OPERATIONAL
REGIONAL
LEGISLATIVE / INTERGOV'T AFFAIRS
COMMS / PUBLIC AFFAIRS
EXTERNAL ENGAGEMENT
DATA INFORMATION
IA/ INTERNATIONAL AFFAIRS
LEGAL / GC
POLICY / BUDGET
MARINE MAMMALS

Document ID: 0.7.19.649.1

STATUS UPDATES

ACTIONS	LEAD	TASKERS
	Bill Conner	
	Steve Murawski	
	Brian Pawlak	
	Tony Penn	
	Phil Kenul	
	Buck Sutter	
	John Gray	
	Justin Kenney	
	Andy Winer	
	Joe Klimavicz	
	Jim Turner	
	Lois Schiffer	
	Sally Yozell	
	John Oliver	

NOTES

Received(Date): Fri, 28 May 2010 16:57:05 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Re: ICC members?
To: "Mark.W.Miller" <Mark.W.Miller@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Christopher S Moore <Christopher.S.Moore@noaa.gov>

Mark~

Chris Moore or Mike Weaver can help with this request. My understanding is that they are the primary contacts with the bulk of the remainder of the ICC as rotation of NOAA staff.

Mark.W.Miller wrote:
> Can the NIC folks get a list of the ICC members?

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
cell: 240-328-4812
fax: 202-482-4116

Received(Date): Fri, 28 May 2010 18:27:18 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Science Report - attached
To: DWH leadership <DWH.Leadership@noaa.gov>

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: B6 Privacy
cell: B6 Privacy
fax: B6 Privacy

NOAA Science Situational Awareness Briefing

Deepwater Horizon MC252

May 29, 2010

EXPERIMENTAL PRODUCT
** For Internal Use ONLY **

NOAA Science
Situational Awareness Briefing

Deepwater Horizon MC252

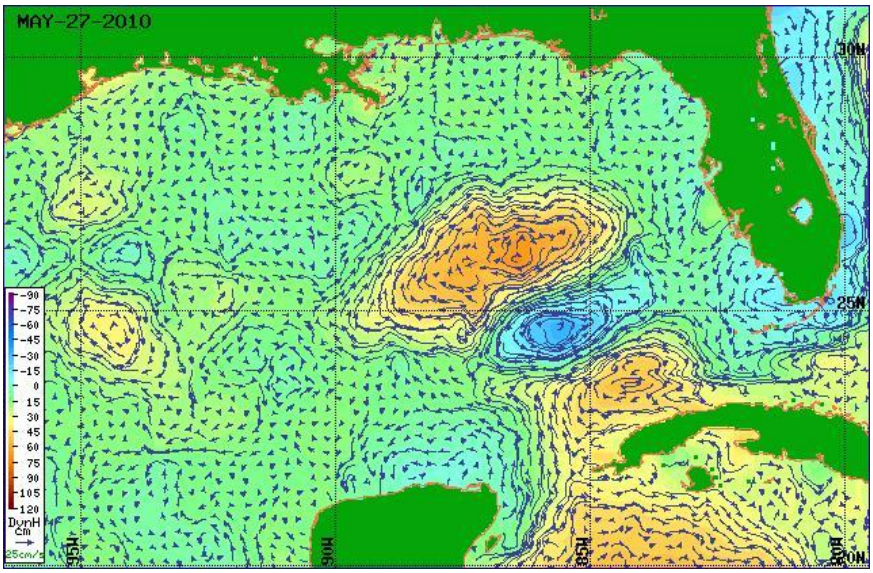
May 29, 2010

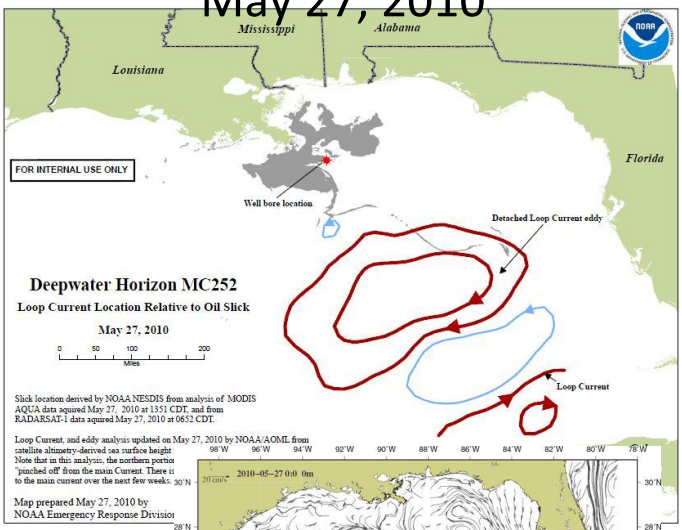
EXPERIMENTAL PRODUCT
** For Internal Use ONLY **

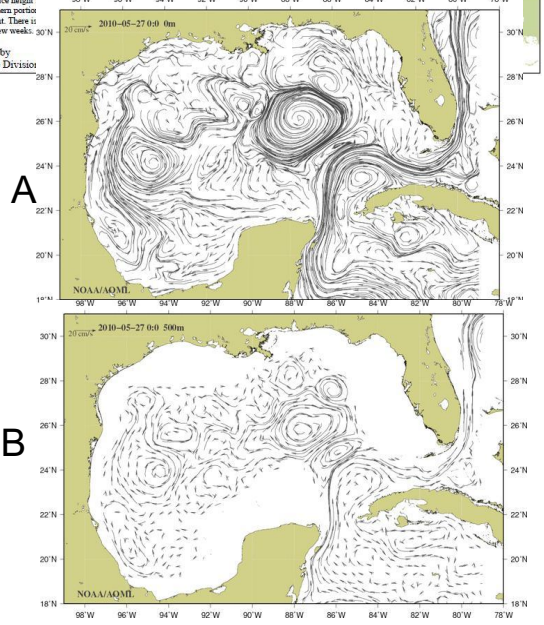
Topic Areas

- Loop Current Dynamics
- Protected Species Status
- PAH Dispersants – use and toxicity
- Seafood Safety Sampling
- NOAA Assets (what is in the queue?)

Loop Current Discussion
May 27, 2010







·Northern part detached (Eddy Franklin - EF)

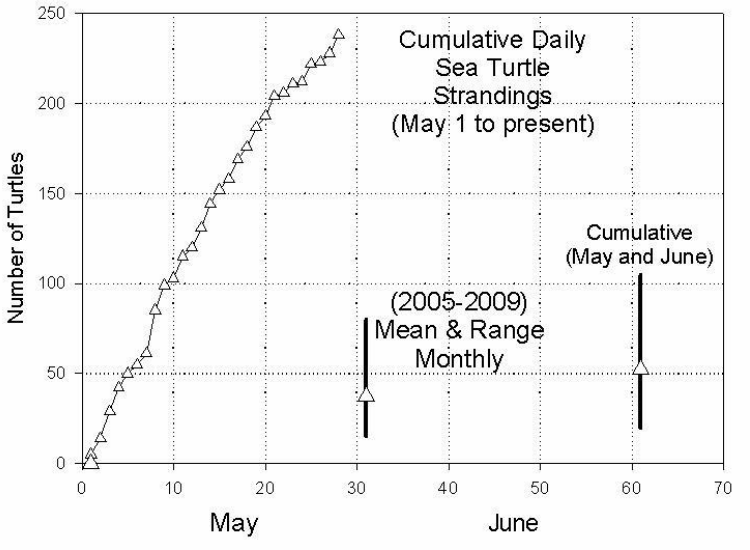
·Strong potential for reattachment in the next week or two

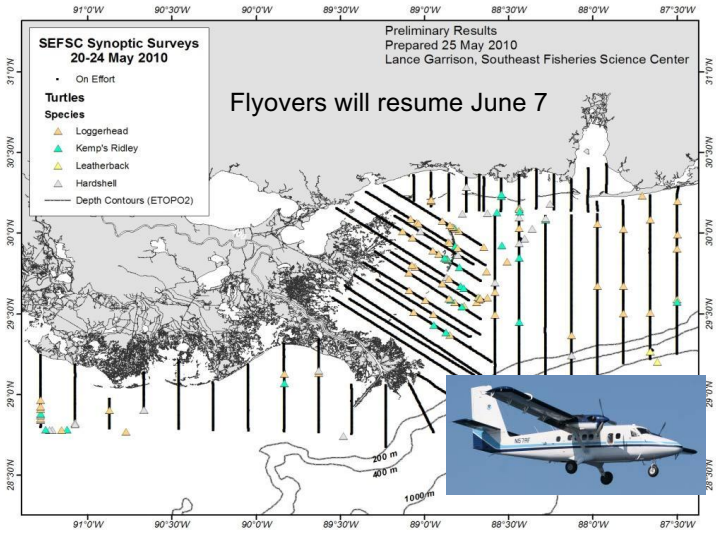
·Maximum currents in EF 3.6 knots

·A thin filament of transparent sheen continues to be reported on northern edge of Eddy Franklin

·Some models show thin connection of warm water remaining between LC and EF on western side

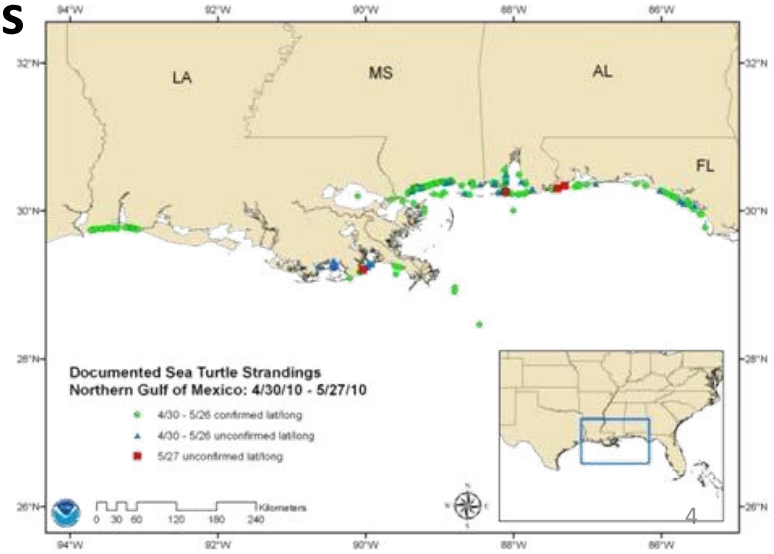
·It appears a warm ring has been shed from the Loop Current at the (A) surface and has also been detached at (B) 500 m depth. These rings may re-attach within days, weeks or months, or may never do so.

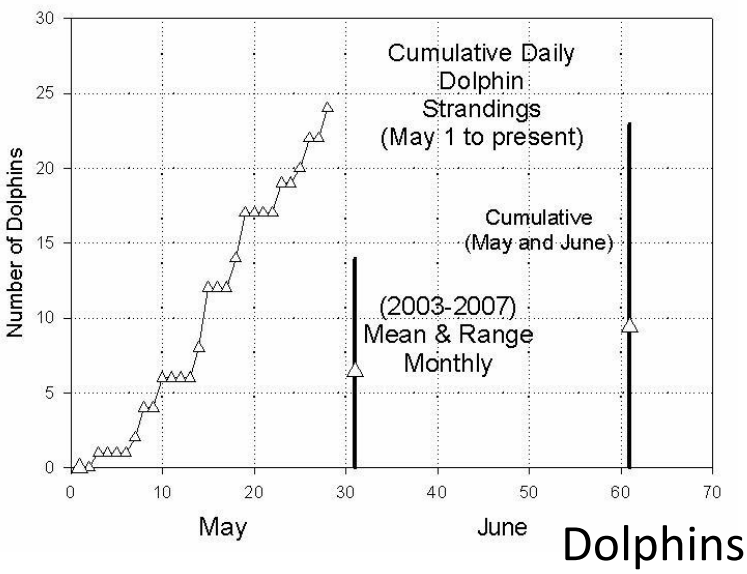




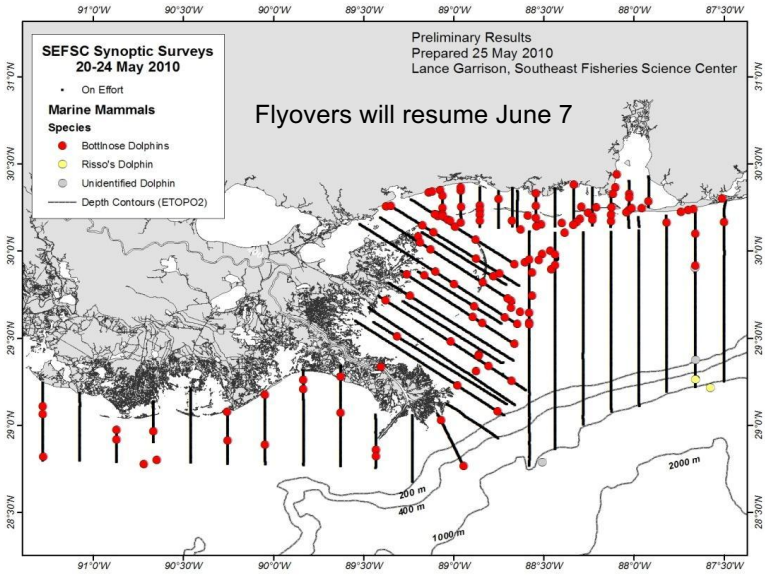
Turtles

Turtle Status	
Total Verified Turtles	**238**
Total dead stranded turtles	222
Total live turtles currently in rehabilitation	12
Total live turtles collected that died in care	3
Total live released turtles	1
Turtle Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	7
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	17
Number of full necropsies performed	50
Verified strandings but animals not collected or awaiting necropsy	148





Dolphins



Dolphin Status	
Total Verified Dolphins	**24**
Total dead stranded dolphins	24
Total live dolphins currently in rehabilitation	0
Total live dolphins stranded that died in care	0
Total live released dolphins	0
Dolphin Necropsy Status (of dead animals)	
Number assessed and unable to perform necropsies (e.g., advanced decomposition)	8
Number of partial necropsies performed (e.g., due to scavenging or autolysis)	7
Number of full necropsies performed	3
Verified strandings but animals not collected or awaiting necropsy	6

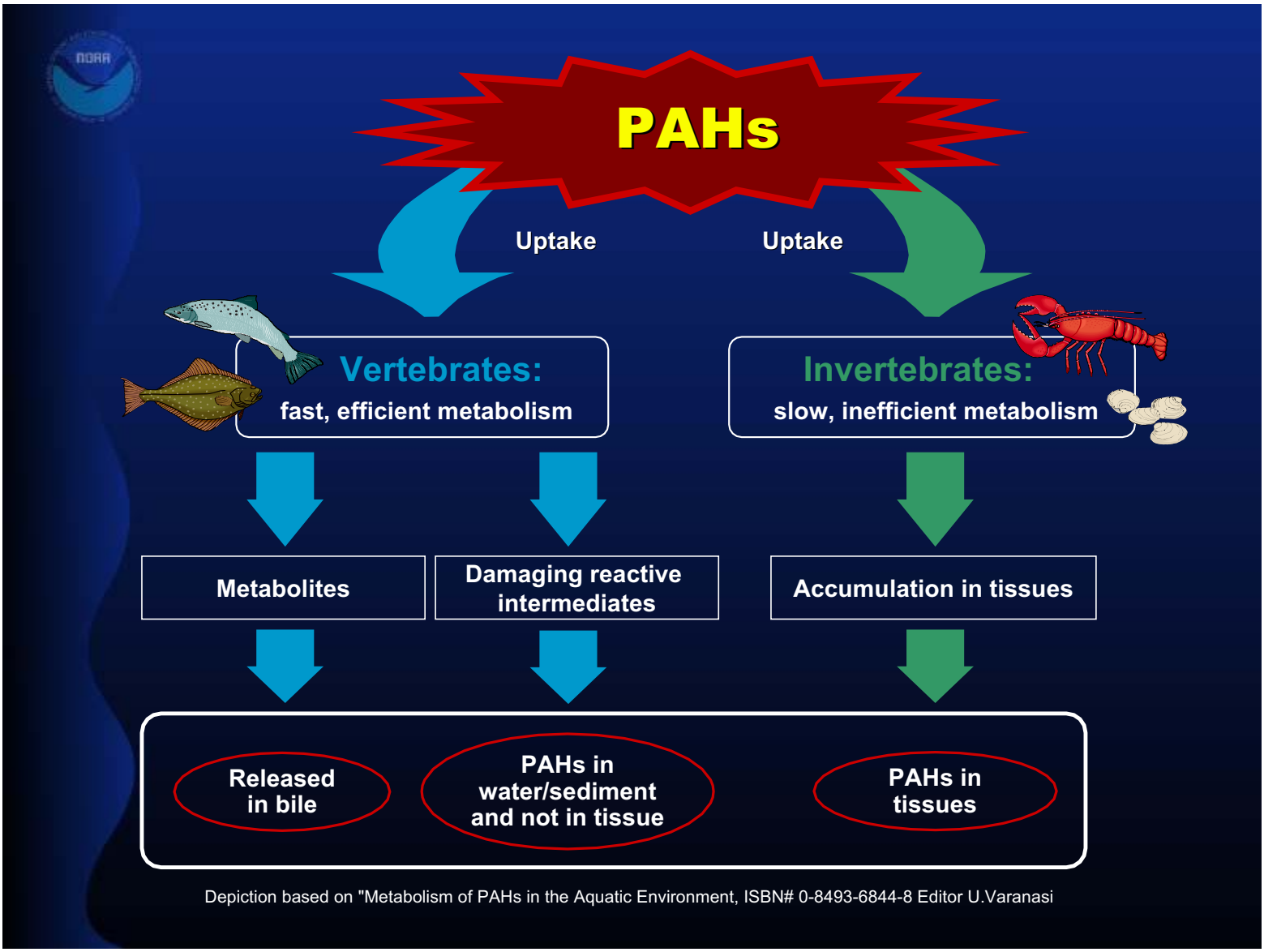
Next flyover surveys will begin June 7th

Criteria For Establishing Oiling Status of Stranded Marine Mammals or Turtles

(From strongest to least strong lines of evidence)

1) Evidence of external oiling.
2) Evidence of internal oiling on initial exam: Oil in oral cavity or gastrointestinal tract
3) Evidence of internal oiling on necropsy: Oil in gastrointestinal tract
4) Evidence of pathological changes strongly associated with oil exposure on necropsy: Acute respiratory damage or pathology, acute damage or significant irritation to ocular tissues or mucous membranes.
5) Strandings in the "declared spill area".
6) Strandings adjacent to the "declared spill area" within a specified distance that affected mammals or turtles may travel after being affected (distance to be determined upon daily consultation with the Envt Unit within the Planning Section and the NR

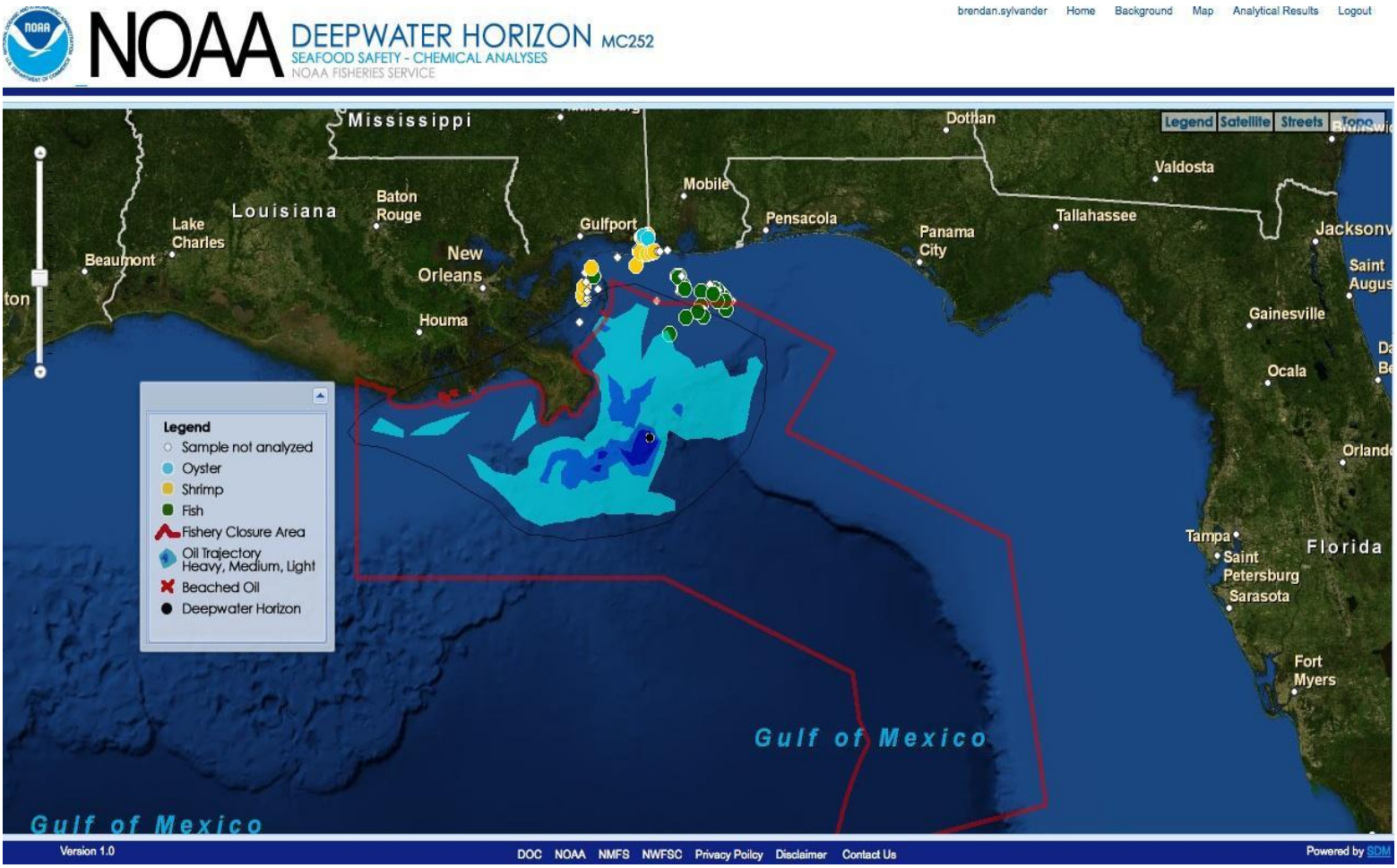
Document ID: 0.7.19.691.1


PAHs
Uptake
Uptake
Vertebrates:
fast, efficient metabolism
Invertebrates:
slow, inefficient metabolism
Metabolites
Damaging reactive intermediates
Accumulation in tissues
Released in bile
PAHs in water/sediment and not in tissue
PAHs in tissues
Depiction based on "Metabolism of PAHs in the Aquatic Environment, ISBN# 0-8493-6844-8 Editor U.Varanasi

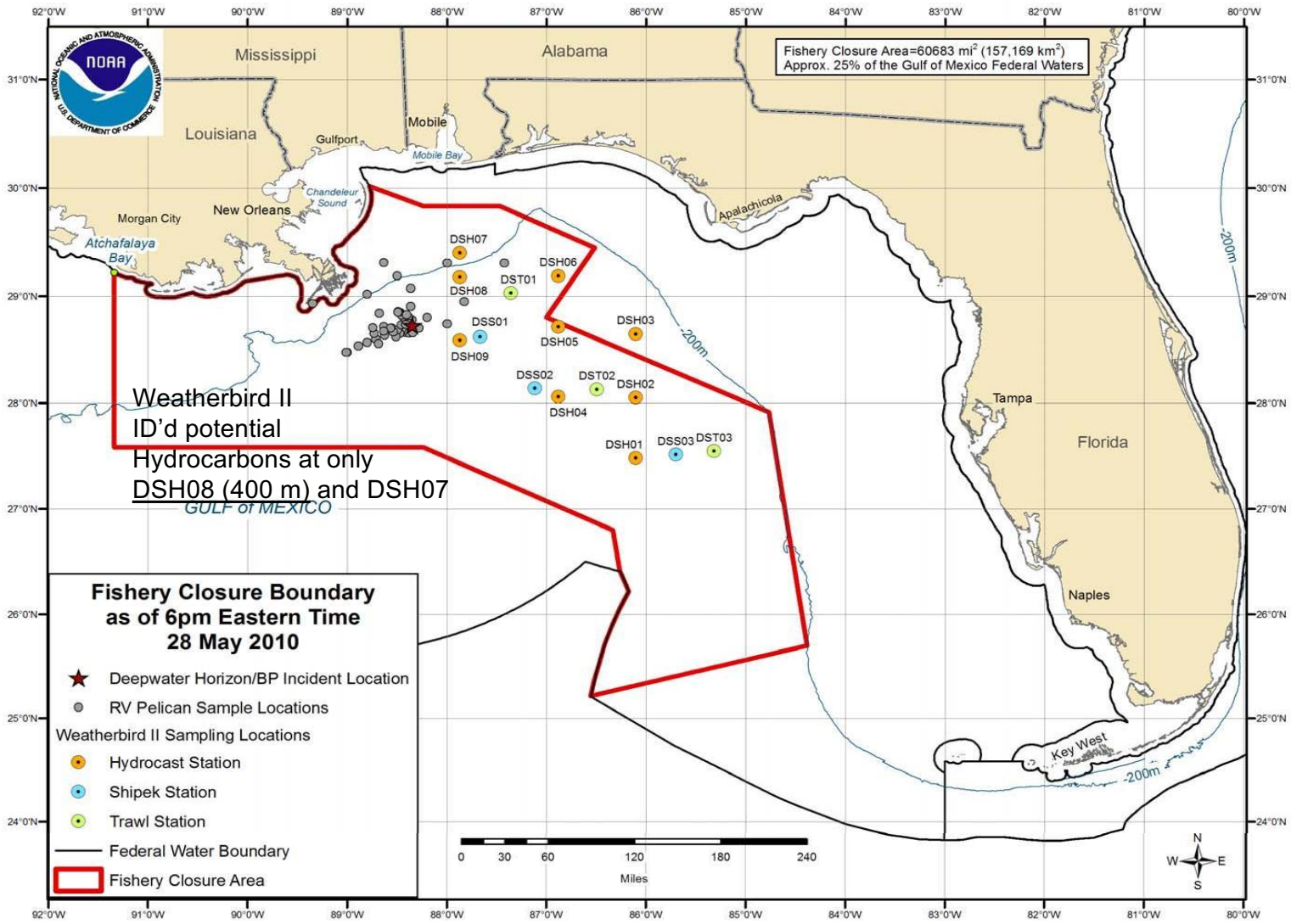
Dispersant Constituents

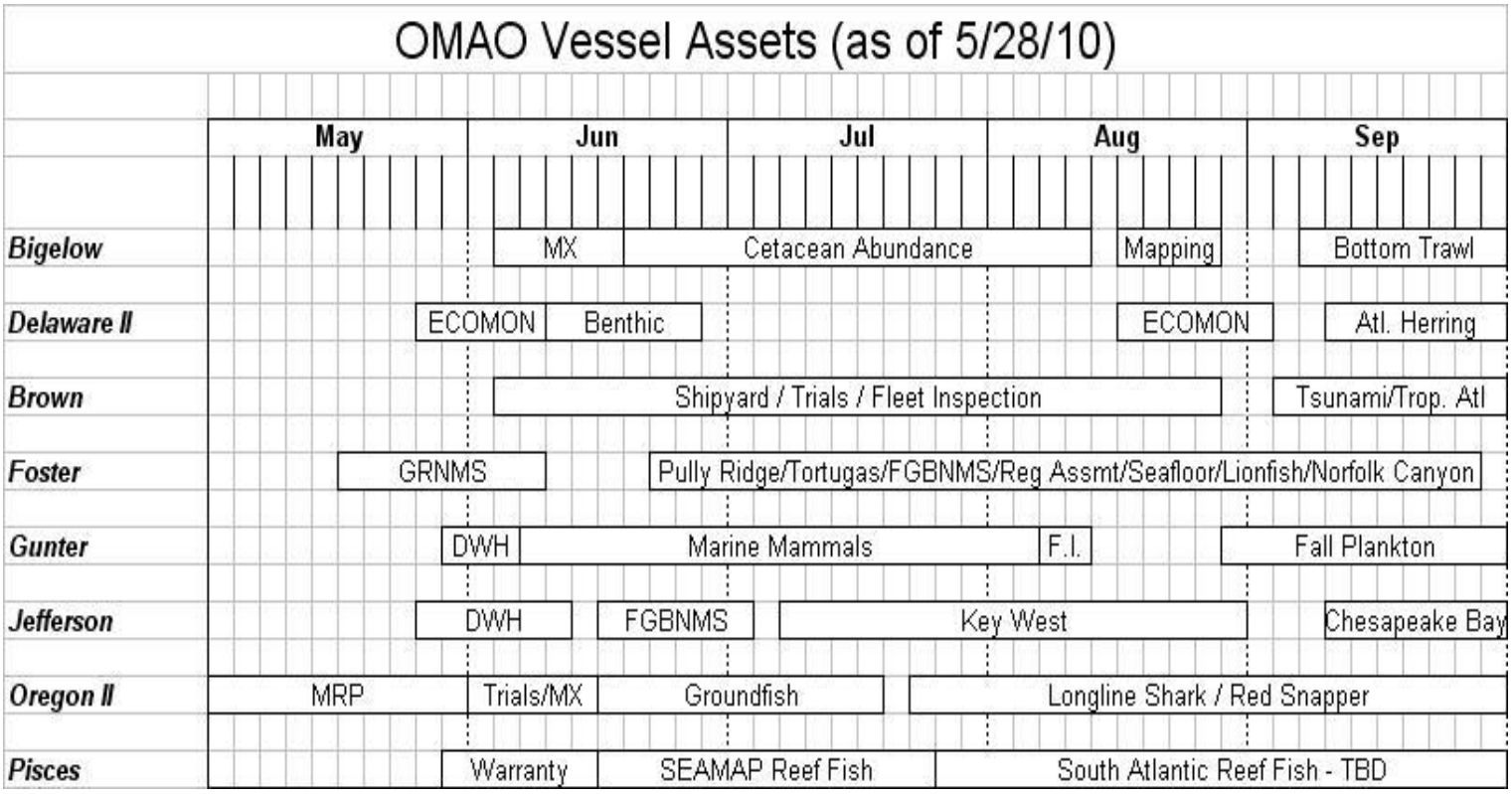
The following list of chemicals has been developed for distribution by EPA.

Item	CAS Registry Number	Chemical Name (TSCA Inventory)
1	57-55-6	1,2-Propanediol
2	111-76-2	Ethanol, 2-butoxy-
3	577-11-7	Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)
4	1338-43-8	Sorbitan, mono-(9Z)-9-octadecenoate
5	9005-65-6	Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs.
6	9005-70-3	Sorbitan, tri-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs
7	29911-28-2	2-Propanol, 1-(2-butoxy-1-methylethoxy)-
8	64742-47-8	Distillates (petroleum), hydrotreated light

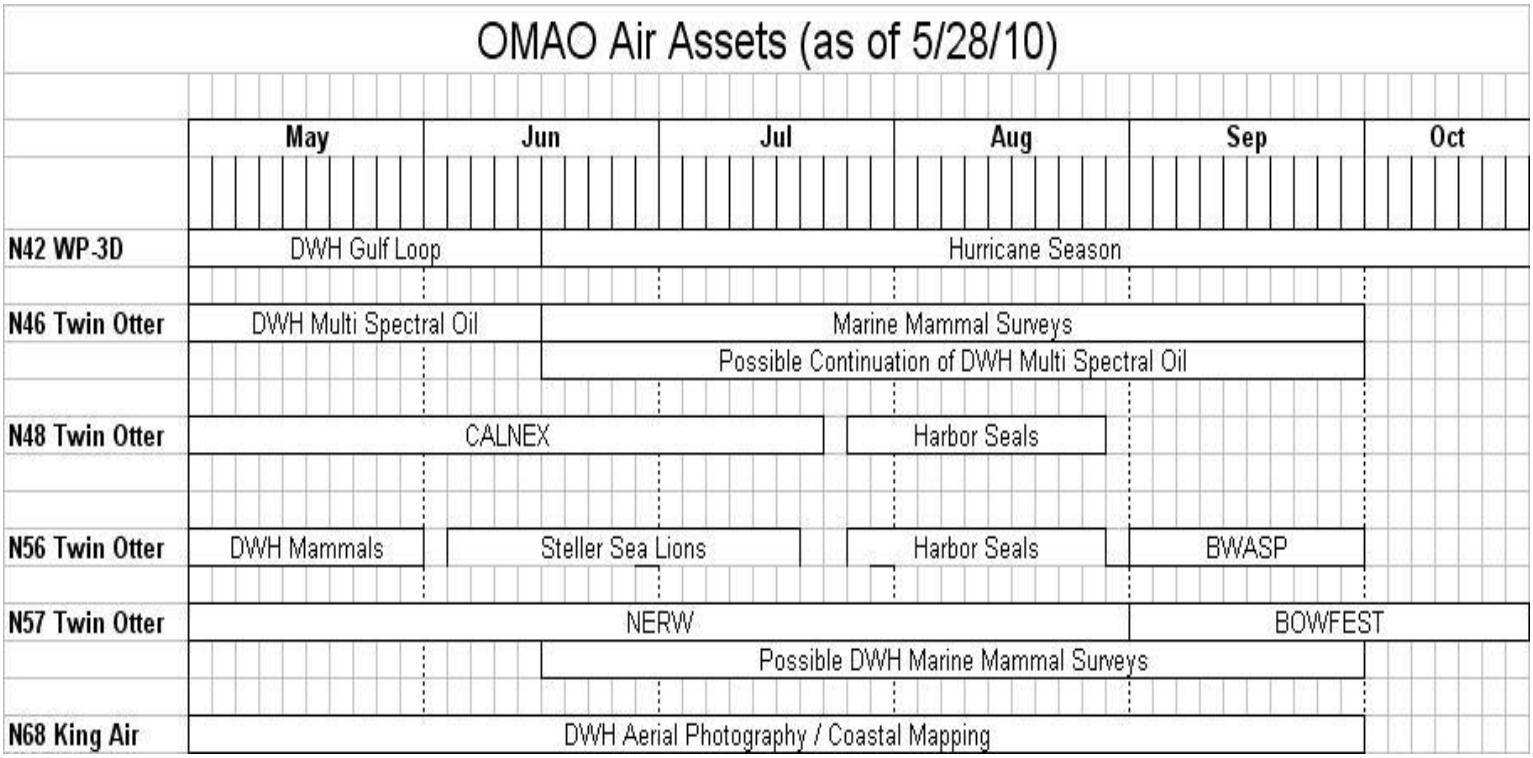


- 69 shrimp and fish samples arrived at the NWFSC on May 27, 2010
- 73 shrimp and fish samples arrived at the NWFSC on May 28, 2010
- 12 red snapper composite samples analyses initiated today


Fishery Closure Area=60683 mi² (157,169 km²)
Approx. 25% of the Gulf of Mexico Federal Waters
Mississippi
Alabama
Louisiana
Gulfport
Mobile
Mobile Bay
Chandeleur Sound
New Orleans
Morgan City
Atchafalaya Bay
Apalachicola
Tampa
Florida
Naples
Key West
-200m
DSH07
DSH06
DST01
DSH08
DSS01
DSH03
DSH05
DSH09
DSS02
DST02
DSH02
DSH04
DSH01
DSS03
DST03
Weatherbird II
ID'd potential
Hydrocarbons at only
DSH08 (400 m) and DSH07
GULF of MEXICO
Fishery Closure Boundary
as of 6pm Eastern Time
28 May 2010
Deepwater Horizon/BP Incident Location
RV Pelican Sample Locations
Weatherbird II Sampling Locations
Hydrocast Station
Shipek Station
Trawl Station
Federal Water Boundary
Fishery Closure Area
0 30 60 120 180 240
Miles
N
W
E
S



Document ID: 0.7.19.691.1


OMAO Air Assets (as of 5/28/10)
May
Jun
Jul
Aug
Sep
Oct
N42 WP-3D
DWH Gulf Loop
Hurricane Season
N46 Twin Otter
DWH Multi Spectral Oil
Marine Mammal Surveys
Possible Continuation of DWH Multi Spectral Oil
N48 Twin Otter
CALNEX
Harbor Seals
N56 Twin Otter
DWH Mammals
Steller Sea Lions
Harbor Seals
BWASP
N57 Twin Otter
NERW
BOWFEST
Possible DWH Marine Mammal Surveys
N68 King Air
DWH Aerial Photography / Coastal Mapping

Received(Date): Fri, 28 May 2010 20:51:49 -0400
From: Samuel Rauch <Samuel.Rauch@noaa.gov>
Subject: Re: talking points
To: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Cc: "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'Eric.Schwaab@noaa.gov'" <Eric.Schwaab@noaa.gov>,"'steve.murawski@noaa.gov'" <Steve.Murawski@noaa.gov>,"'john.oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Deb.Lambert@noaa.gov'" <Deb.Lambert@noaa.gov>,"'Rebecca.Chiampi@noaa.gov'" <Rebecca.Chiampi@noaa.gov>,"'Christine.Patrick@noaa.gov'" <Christine.Patrick@noaa.gov>,"'Beth.Lumsden@noaa.gov'" <Beth.Lumsden@noaa.gov>
2010_0528_Seafood_safety_TPs Second Round of Rauch Comments.doc

Lauren,
I have edited the document to address my concerns. I will call you to walk through this. In general (and after talking to Eric). I think we can frame this whole discussion by saying that the government (i.e., not just us) generally plays an active role in ensuring the safety of gulf seafood in general. As part of our overall efforts in this regard, we are a issuing this comprehensive, etc. plan to make sure that the DWH spill does not undermine the safety of the product available for consumption. Eric believes that we can now say that the subsurface oil is not affecting areas outside of the spill, so we dont have to do broader gulf sampling. Nevertheless, the document was confusing as to where we were sampling and hopefully I have clarified that. I also made a number of other changes to address my other concerns. The balloon comments explain them.

Lauren.B.Lugo wrote:

> I just talked to Sam. His concern is we are saying we are making sure seafood is safe when really all we are doing is testing that it's not contaminated with oil. He's right. We'll get it right and send new versions. lauren
>
> Samuel Rauch wrote:
>
> > I am on the phone right now trying to get eric.
> >
> > ----- Original Message -----
> > From: Lauren.B.Lugo <Lauren.B.Lugo@noaa.gov>
> > To: Samuel Rauch <Samuel.Rauch@noaa.gov>
> > Cc: 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>; 'Eric.Schwaab@noaa.gov' <Eric.Schwaab@noaa.gov>; 'steve.murawski@noaa.gov' <Steve.Murawski@noaa.gov>; 'john.oliver@noaa.gov' <John.Oliver@noaa.gov>; 'Deb.Lambert@noaa.gov' <Deb.Lambert@noaa.gov>; 'Rebecca.Chiampi@noaa.gov' <Rebecca.Chiampi@noaa.gov>; 'Christine.Patrick@noaa.gov' <Christine.Patrick@noaa.gov>; 'Beth.Lumsden@noaa.gov' <Beth.Lumsden@noaa.gov>
> > Sent: Fri May 28 18:02:34 2010
> > Subject: Re: talking points
> >
> > Sam-- I'm in the office. Give me a call on my cell phone and I will make the changes immediately as you dictate over the phone. B6 Privacy

Samuel Rauch wrote:

----- Original Message -----
From: Lauren.B.Lugo <Lauren.B.Lugo@noaa.gov>
To: John Rapp <John.Rapp@noaa.gov>
Cc: Eric Schwaab <Eric.Schwaab@noaa.gov>; Samuel Rauch <Samuel.Rauch@noaa.gov>; Steve Murawski <Steve.Murawski@noaa.gov>; John Oliver <John.Oliver@noaa.gov>; Deb Lambert <Deb.Lambert@noaa.gov>; Rebecca Chiampi <Rebecca.Chiampi@noaa.gov>; Christine Patrick <Christine.Patrick@noaa.gov>; Beth Lumsden <Beth.Lumsden@noaa.gov>
Sent: Fri May 28 17:57:17 2010
Subject: talking points

John-- Eric Schwaab cleared the attached draft talking points. Q&As to
follow. Lauren

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
B6 Privacy
fax: B6 Privacy

--
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DRAFT—INTERNAL USE ONLY

Seafood Safety Talking Points / Key Messages
Prepared 5/28/10 by NOAA Fisheries

U.S. Government-wide General Talking Points:

- The U.S. Government plays an active role in ensuring the overall safety of seafood harvested from the Gulf of Mexico. As part of those overall duties, we have established ~~has~~ a comprehensive, coordinated, multiagency plan to ensure that harvested Gulf seafood is safe to eat.

- We are monitoring fish from oiled areas and testing for both petroleum and dispersant to ensure that no fish will be caught in contaminated areas. ~~so that closed fishing areas can be reopened when, based on FDA-approved levels, it is safe to do so.~~

- Our response involves the full participation and consensus of multiple Federal agencies, most notably the FDA and EPA, as well as the Gulf States.

Closures and Re-openings

- NOAA has the authority to close fishing areas in federal waters to make sure potentially tainted fish are not caught—and to re-open them once the oil is no longer in the area, minimizing the effects on coastal communities as much as possible.

- NOAA and the FDA agree that closing harvest waters which ~~could be~~ have been or are likely to be exposed to the oil is the best way to protect the public from potentially contaminated seafood~~, because it keeps the product from entering the food supply~~.

- The current closures encompass areas known to be currently affected by oil, either on the surface or below the surface, as well as areas projected to be affected by oil. The areas closed to fishing in the Gulf include a buffer area around the known location of oil; this was a precautionary measure to ensure the safety of the seafood products being caught elsewhere in the Gulf.

- Although NOAA believes that all areas with observable sheen are closed, NOAA also advises fishermen not to fish in areas where they observe sheen, even if they are outside a closed area.

- FDA and NOAA have agreed on a protocol to determine when closed federal harvest waters can be re-opened. Under the protocol, harvest waters impacted by oil will not re-open until oil from the spill is no longer present and the seafood samples from the area successfully pass both sensory analysis by trained experts and a chemical analysis to ensure there are no harmful oil residues.

- Determination of opening areas will be made by the NOAA Assistant Administrator for Fisheries based on input from ~~involves coordination with the~~

Comment [SR1]: How about taking this out of the gulf context and say something like both FDA and NOAA (and EPA if you want) have an active role in ensuring the safety of gulf seafood. As part of those overall duties, we have established a comprehensive, coordinated multiagency plan to ensure that the DWH oil spill isn't affecting the safety of gulf seafood.

Comment [SR2]: As I said previously, the point of this document is to stress seafood safety not to indicate how we will reopen fisheries.

Comment [SR3]: As I said, we are not using a "could be exposed" test. We are closing areas based on our likely projections but not closing the extremely large "uncertainty" area

Comment [SR4]: As I said, this is wrong for migratory fish but we don't need to actually say this. We can simply leave it that this is the best way to protect the public. We talk about market sampling later on.

Comment [SR5]: Based on my conversation with Eric

Comment [SR6]: To reflect the fact that closed areas not impacted by the oil may be reopened without testing.

following NOAA Fisheries Offices: Seafood Inspection Program, National Seafood Inspection Laboratory, Northwest Fisheries Science Center, Southeast Fisheries Science Center, and the Southeast Regional Office.

Surveillance and Monitoring

- Harvest waters are closed when ~~there is a possibility~~ that oil has ~~or dispersants have~~ been present in the area or is likely to be present in the area. This model assumes ~~that there is a possibility that in those areas there has been uptake in~~ finfish, shrimp, and other shellfish species may have ingested the oil or otherwise have been contaminated by the oil which may create a ~~that could be~~ a public health problem. ~~The fishery must~~ Seafood fisheries will remain closed until testing is completed to confirm that the seafood is acceptable for harvest and human consumption

- As an extra precaution, NOAA is ~~expanding its~~ conducting surveillance and monitoring ~~to include~~ in areas outside the areas directly affected by oil to help assure that potentially tainted seafood does not enter the marketplace.

- ~~The areas observed to contain surface oil will have the highest rate of sampling.~~ There are areas in the Gulf which had been initially closed because of observed surface oil but where the oil has moved out of the area some time ago. These areas will have the highest rate of sampling. We are also sampling from "buffer areas", a zone surrounding the area with surface oil.

- ~~We are also sampling from "buffer areas," a zone surrounding the area with surface oil.~~ Openings of parts or all of the areas currently closed when considered directly contaminated by the oil spill will only occur if the results of the sensory and chemical analyses indicate that seafood species meet the FDA-approved public health criteria in the protocol.

- ~~NOAA and FDA are considering how to conduct monitoring of the general seafood supply entering commerce. In particular, market samples of large pelagic species (e.g., yellowfin tuna) and other species will provide additional protection to assure that the seafood supply from the Gulf remains healthy and wholesome.~~

Re-opening Protocol

- The FDA and NOAA have agreed on a protocol to determine whether an area can be opened. The title is *Protocol for Interpretation and Use of Sensory Testing and Analytical Chemistry Results for Re-Opening Oil-Impacted Areas Closed to Seafood Harvesting*

- ~~Similar protocols have been tested and proven reliable in past spills.~~

Comment [SR7]: I do not believe that we have said that dispersants are either an adulterant or a public health risk.

Comment [SR8]: To deal with live rock fisheries

Comment [SR9]: See my comment on prior version.

Comment [SR10]: Since we weren't doing any before, we are not really expanding

Comment [SR11]: As near as I can tell, there was only 1 sample take from any area which is currently covered .

Comment [SR12]: Repeat of 2nd bullet

Comment [SR13]: Why would we put this in if we are only "considering". Doesn't that just beg the question of when we would stop considering and take action.

Comment [SR14]: While I think this should be deleted unless we are sure it will happen, I don't think we should focus on large pelagics (which are not likely to be significantly effected) but just leave it more vague that we are doing market sampling. Further, we should say "help assure" as we did in 2nd bullet.

Comment [SR15]: As I said, this simply isn't true. I am not aware of any other formal agreement with FDA like this one and certainly nothing has been similar to this in the past. If it had been, it wouldn't have been so difficult to get this one out.

- ***FDA should add key messages about the levels of concern under the protocol and how they relate to human health.***

Testing of Seafood

- NOAA has the expertise and knowledge needed for collecting and analyzing seafood to detect contamination. NOAA's Seafood Inspection experts usually focus on ensuring seafood is fresh and meets federal regulations for processing, and they are now focused on detecting oil ~~and dispersant~~ contaminants through sensory testing and for oil through chemical testing.

- NOAA is collecting a variety of types of seafood including finfish, shrimp, crabs, and shellfish for analysis. Samples ~~are gathered from within the closed fishing area and~~ are compared to baseline samples from un-oiled areas, as well as samples taken after Hurricanes Katrina and Rita.

- Testing involves chemical and sensory analysis of fish and shellfish. Chemical analysis of oil will allow scientists to conclusively determine whether contaminants in fish are present and to what level and whether the contaminants are due to the spill or related clean-up activities. Sensory experts check the scent, taste, and look of seafood.

- The combination of sensory and chemical analysis provides important analytical data in the monitoring process.

- NOAA's seafood inspection experts are training state employees in sensory analysis, so that more experts can be available to examine fish.

- Results of samples will be made available to the public through existing channels and a dedicated website which is under development.

Comment [SR16]: My original comment had been that this is misleading because it implies that we test all seafood. However, rather than an overly technical clarification in this bullet, I think it would make sense to add a bullet ahead of this one that sets out FDA's duty and NOAA's role in seafood inspection (can lift from the FAQs). This bullet can then be left as is (except for change below)

Comment [SR17]: No one has yet indicated that the dispersants are a contaminant. However, if we have to say something about dispersants, I would say "and any potential dispersant contaminants".

Comment [SR18]: This is confusing (see above) and unnecessary.

Received(Date): Sat, 29 May 2010 09:44:55 -0400
From: "william.conner" <William.Conner@noaa.gov>
Subject: Prep for NRT Meeting, May 29, 2010
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Ken Barton <Ken.Barton@noaa.gov>
NRT Agenda 29 May 1100 mtg.doc

For Official Use Only

May 29, 2010
National Response Team Meeting at 1100:

Call in Number: 1-[b6] and participation pin is: [B6 Privacy]
Please dial in 15 minutes before the call for a roll call starting at 10-minutes before the scheduled start time.

NOAA SSC Charlie Henry will be with RADM Landry at the Unified Area Command in Robert, LA. Any detailed or technical questions may be referred to him.

DOC/NOAA Objectives for the Meeting:

1. Convey substantive messages about NOAA involvement in the response.
2. Acquire current status of response, coordination and outreach efforts.
3. Answer questions on NOAA activities and products.

The agenda for the NRT meeting is attached. There are no agenda items assigned to NOAA and the agency does not have a priority message to convey at today's meeting.

The following NOAA products have been distributed to the NRT agencies prior to the meeting:

- Most recent Spot Weather Forecast
- Coastal trajectory prediction for location of surface oil with 72-hour outlook
- Offshore trajectory prediction for location of surface oil with 72-hour outlook
- Shoreline Impact Outlook showing likely new landfalls of oil over the coming 5 days
- Loop Current location relative to oil slick

Overview of NOAA products

- Weather
  - NW winds today will switch to the S and SW tonight, increasing the likelihood of additional oil coming to shore over the next several days. Seas will be calm with a light chop. Isolated thunderstorms may disrupt spill operations again late in the day.
- Coastal Trajectory
  - Southerly winds will tend to push the oil back onshore with fresh deposits possible on the east side of eh Delta. By mid-week, it is possible that oil could spread to the east, possibly involving the Mobile Bay area and even Pensacola (see Coastal Impact Outlook).

- Loop Current with Offshore Trajectory

- The northern part of the LC remains separated, and has formed a large clockwise eddy over 100 miles south of the spill site. As a result, any small amounts of oil that may reach this eddy will be moved in a large circular pattern in the middle of the Gulf, and not threaten any shorelines. There is also minimal risk of the LC serving as a significant mechanism to transport oil toward any shorelines and there is no evidence to suggest significant amounts of oil are moving toward the LC. The eddy discussed above will likely re-attach to the Loop Current over the next week or two. Only non-contiguous sheens and scattered tarballs are visible in this eddy.

· Agenda Item: Polling of NRT Secretaries

No priority messages have been identified for NOAA to contribute.

--
William G. Conner, Ph.D.
Chief, HAZMAT Emergency Response Division
NOAA Office of Response and Restoration
Phone: [redacted] (190)
Cell: [redacted]

BP Oil Spill Response – Gulf of Mexico Incident
National Response Team (NRT) Phone Conference Meeting

AGENDA

Conference call-in phone number: 1-[redacted] and participation pin is: [redacted]
May 29, 2010 11:00 AM EDT

Objective: Secretary Napolitano and the National Incident Commander (NIC) have requested a conference call with NRT Agency Heads (Secretary Level) today at 11:00 AM EDT. This meeting should last no longer than 30 minutes.

Audience: NRT Agency Heads (Secretary Level) plus one member. Regional Response Team IV and VI Co-Chairs may call in.

May 29, 2010

Call In	
Roll Call	USCG
Significant Activities	NIC
SubSurface Response Status	
On Water Recovery Status	
Shoreline Response Status	
Weather/Oil Trajectories	
Polling of NRT Secretaries	USCG
Communication Update	OPA
Legal Affairs Update	OGC
Intergovernmental Affairs Update	IGA
Congressional Affairs Update	OLA
Secretary's Closing Remarks	S-1
Meeting Adjourned	

Document ID: 0.7.19.598.1

Received(Date): Sat, 29 May 2010 16:49:39 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Update on NOAA Plume research 5_29 _10-1
To: DWH leadership <DWH.Leadership@noaa.gov>
Update on NOAA Plume research 5_29 _10-1.doc

Material referenced on the phone call in relation to the plume.

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: B6 Privacy
cell: B6 Privacy
fax: B6 Privacy

Update on NOAA Plume research
For Senator Nelson visit to the JIC
5/29/10

In the context of the science that NOAA and other U.S. government and academic experts are using to determine the composition of fluid in the Gulf, a plume is simply a column of one fluid (in this case an oil-water mix) moving through another (in this case seawater). Near the well head and within a 10-15 nautical mile (nm) radius, the dispersed oil we're seeing is highly diffused. The location where the Weatherbird II scientists reported hydrocarbons at depth based on their on-board instrumentation is approximately 52 nm south of Mobile Bay, well within the current NOAA fishery closure zone. Water samples collected by Weatherbird II scientists at locations they associated with a plume are currently being analyzed for petroleum concentrations. However, the fact that these scientists noted that the water they collected had no visible evidence of oil, argues that the plume is not, as it has been characterized in media reports, a giant column of crude oil expanding outward from the leaking wellhead.

NOAA and EPA continue to closely monitor the presence of oil and the use of surface and sub-surface dispersant's. NOAA currently has the Gordon Gunter at sea using acoustics, fluorometry, and water sampling techniques to assess the distribution and magnitude subsurface dispersed oil. Additionally, the Gordon Gunter carries the Monterey Bay Aquarium Research Institute's autonomous underwater vehicle which has the ability to collect water samples. The Gordon Gunter will be vectored to the locations NNE of the well head as it continues its assessment.

The Thomas Jefferson will depart in the next day using similar techniques for assessing the distribution of subsurface dispersed oil to the WSW of the well site. Based on data from these two ships and other platforms, additional sampling and assessment missions will be developed and undertaken. In addition, NOAA continues to use aircraft to drop Airborne eXpendable BathyThermographs (AXBTs) to gain better resolution of shallow and deep current structure for the Loop Current.

Document ID: 0.7.19.612.1

Received(Date): Sat, 29 May 2010 18:23:24 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: Re: Fw: Pre-brief at 9:05 on Sunday
To: Linda Belton <Linda.Belton@noaa.gov>
Cc: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,"'dave.westerholm@noaa.gov'" <Dave.Westerholm@noaa.gov>,"'monica.medina@noaa.gov'" <Monica.Medina@noaa.gov>,"'david.kennedy@noaa.gov'" <David.Kennedy@noaa.gov>,"'Jen.Pizza@noaa.gov'" <Jen.Pizza@noaa.gov>,"'jacqueline.j.rousseau@noaa.gov'" <Jacqueline.J.Rousseau@noaa.gov>,"'john.gray@noaa.gov'" <John.Gray@noaa.gov>

Linda -

It will be Dave Westerholm on Sunday
Dave Kennedy on Monday.

Linda Belton wrote:

From: McGrath, Shaun L. <Shaun_L._McGrath@who.eop.gov>
To: McGrath, Shaun L. <Shaun_L._McGrath@who.eop.gov>; Belton, Linda <Linda.Belton@noaa.gov>; Monica Medina <Monica.Medina@noaa.gov>; heather.smith1@dhs.gov <heather.smith1@dhs.gov>; Tennyson, Stephanie L <Stephanie.Tennyson@dhs.gov>; Pallone.Sarah@epamail.epa.gov <Pallone.Sarah@epamail.epa.gov>; Lori_Faeth <Lori_Faeth@ios.doi.gov>; Kayyem, Juliette <Juliette.Kayyem@dhs.gov>; Murk, David CDR <David.W.Murk@uscg.dhs.gov>; Moilanen, Stephen S. <Stephen_S._Moilanen@who.eop.gov>; Mark.G.Moland@uscg.mil <Mark.G.Moland@uscg.mil>; Tate, Gail <gail.tate@dhs.gov>; Munoz, Cecilia <Cecilia_Munoz@who.eop.gov>; Wareing, Tracy <Tracy.Wareing@dhs.gov>
Sent: Sat May 29 17:59:38 2010
Subject: Pre-brief at 9:05 on Sunday

All,

Daft agenda for the pre-call tomorrow is below. Please let me know if there are any changes.

Sunday, May 30 Call with Governors

9:05 a.m. pre-brief; 9:15 Governors

1- b6

HOST Pin B6 Privacy

B6 Privacy

Please let me know if there are any changes to the speakers below. Also, please be prepared to cover the action items that came up on yesterday's call.

DRAFT AGENDA

Call with Governors – 9:05 a.m. pre-brief; 9:15 Governor

· Opening remarks (Valerie Jarrett)

· Observations and Trajectory – **David Kennedy, NOAA**

o NOAA will provide the latest observations and trajectories

o Jindal— are you seeing decrease in the intensity of the heavy oil (due to skimming and dispersants) -- Gov is trying to anticipate oil that may come ashore over the next 2 weeks

· Situation &Leak Stabilization Update – **RADM Peter Neffenger, NIC**

o Peter— Top Kill – we will know today whether successful. Peter will notify Govs when that decision is made

§ Alternatives if unsuccessful: 1) Cut riser and either cap or hat (depending on if it is a clean cut) (72-96 hours); 2) BOP (will work concurrently with cap, total time unclear to put in place); 3) valve

o Jindal— when doing BOP, do you have to remove cap? (how much flow will there be when doing these procedures?)

o Peter— Laid out the 4 questions that they will be considering when working this weekend to validate the berm project. We will have a decision on that by Tuesday.

o Jindal— His interpretation of POTUS directive was only one criterion: does it stop the oil? If yes, then let's make BP pay for it (and do the other 5 projects) Peter agreed

o Jindal— (He has already communicated these to BP)

§ Veterinarians are not being allowed to do search and rescue

§ Gov wants BP to start dredging immediately on the first berm project that was approved

§ BP's onerous liability waiver – we fixed it with BP, but now some of their sub-contractors are including it. (ex: AL contractor) VJ suggested that Gov have his AG talk to the US Atty.

· Operations Report – **RADM Mary Landry, UAC**

o Response Plans and Boom

o Landry— talked to Doug Suttles about Jindal's suggestion on Thursday that BP should make a line of credit available to local governments that are running into cash flow problems. Jindal said he expected Suttles to call yesterday, but will call him today to discuss.

· Update on Claims process – **Tracy Wareing, Lead, Integrated Services Team**

o Small business claims

o Appeals process

· Open discussion and Q&A with Governors and state officials

· Next call – 9:15 a.m. EDT (8:15 CDT) Monday, May 31, 2010

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Beth Dieveney
NOAA Program Coordination Office

Document ID: 0.7.19.1049

Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: b6
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fax: b6

Received(Date): Sun, 30 May 2010 02:15:46 +0100
From: "St John, Karen" <karen.stjohn@bp.com>
Subject: Update Gulf of Mexico: May 29 2010

1. Press Release

May 29, 2010, 1715 CDT

UPDATE ON GULF OF MEXICO OIL SPILL

BP started the “top kill” operations to stop the flow of oil from the MC252 well in the Gulf of Mexico at 1300 CDT on May 26, 2010.

The procedure was intended to stem the flow of oil and gas and ultimately kill the well by injecting heavy drilling fluids through the blow-out preventer on the seabed, down into the well.

Despite successfully pumping a total of over 30,000 barrels of heavy mud, in three attempts at rates of up to 80 barrels a minute, and deploying a wide range of different bridging materials, the operation did not overcome the flow from the well.

The Government, together with BP, have therefore decided to move to the next step in the subsea operations, the deployment of the Lower Marine Riser Package (LMRP) Cap Containment System.

The operational plan first involves cutting and then removing the damaged riser from the top of the failed Blow-Out Preventer (BOP) to leave a cleanly-cut pipe at the top of the BOP’s LMRP. The cap is designed to be connected to a riser from the Discoverer Enterprise drillship and placed over the LMRP with the intention of capturing most of the oil and gas flowing from the well. The LMRP cap is already on site and it is currently anticipated that it will be connected in about four days.

This operation has not been previously carried out in 5,000 feet of water and the successful deployment of the containment system cannot be assured.

Drilling of the first relief well continues and is currently at 12,090 feet. Drilling of the second relief well is temporarily suspended and is expected to recommence shortly from 8,576 feet.

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BP Press office, US: +1 281 366 0265

Unified Command Joint Information Center:+1 985-902-5231

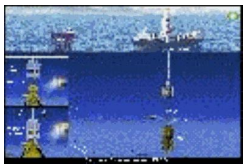
www.deepwaterhorizonresponse.com

www.bp.com/gulfofmexicoresponse

- ENDS -

2. Link to LMRP graphic: http://www.deepwaterhorizonresponse.com/go/doc/2931/564231/

3.



Karen St John

BP America

Sr. Director, Regulatory Affairs

B6 Privacy

stjohnk@bp.com



Received(Date): Sat, 29 May 2010 22:00:13 -0400
From: Lois Schiffer <Lois.Schiffer@noaa.gov>
Subject: Re: [Fwd: Fw: BP Oil Dispersants]
To: "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'Beth.Dieveney@noaa.gov'" <Beth.Dieveney@noaa.gov>,"'Lois.Schiffer@noaa.gov'" <Lois.Schiffer@noaa.gov>

Thanks to both of you

From: john rapp <john.rapp@noaa.gov>
To: 'Beth.Dieveney@noaa.gov' <Beth.Dieveney@noaa.gov>; 'Lois.Schiffer@noaa.gov' <Lois.Schiffer@noaa.gov>
Sent: Sat May 29 21:53:49 2010
Subject: Re: [Fwd: Fw: BP Oil Dispersants]

Thanks Beth

From: Beth Dieveney <Beth.Dieveney@noaa.gov>
To: Lois Schiffer <Lois.Schiffer@noaa.gov>; 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>
Sent: Sat May 29 18:20:55 2010
Subject: [Fwd: Fw: BP Oil Dispersants]

email trail regarding BP oil dispersant

The list is a combined list for both Corexit 9500 and Corexit 9527. At this point, a detailed formula will not be available from EPA until May 29th, and that list would be subject to CBI rules. We are working on getting the detailed list to you faster and without the CBI limitation.

-------- Original Message --------

Subject: Fw: BP Oil Dispersants
Date: Mon, 24 May 2010 17:55:11 +0000
From: Robert Haddad <Robert.Haddad@noaa.gov>
Reply-To: Robert.Haddad@noaa.gov
To: Beth Dieveney <Beth.Dieveney@noaa.gov>

This list of ingredients is partial and for both corexit products. I'll send you the next email. Bob

Robert Haddad PhD
NOAA/ORR
Chief ARD
B6 Privacy

-----Original Message-----
From: Jamon.Bollock@noaa.gov
Date: Mon, 24 May 2010 12:15:19
To: Robert.Haddad<Robert.Haddad@noaa.gov>
Cc: 'Brian Julius'<Brian.Julius@noaa.gov>; 'William

Conner'<William.Conner@noaa.gov>; 'Lois Schiffer'<Lois.Schiffer@noaa.gov>;
<Craig.R.O'Connor@noaa.gov>
Subject: Re: BP Oil Dispersants

Bob,

EPA has provided me with the attached list of component chemicals. This list is publicly cleared and not subject to CBI rules. I am working on obtaining a more detailed formula, but it appears that EPA's regulations are cumbersome. I will let you know when there is news on the front. Please let me know if you have any questions. Thank you.

-Jamon

----- Original Message -----
From: "Robert.Haddad" <Robert.Haddad@noaa.gov>
Date: Saturday, May 22, 2010 1:53 pm
Subject: RE: BP Oil Dispersants
To: 'Brian Julius' <Brian.Julius@noaa.gov>, 'Jamon Bollock'
<Jamon.Bollock@noaa.gov>
Cc: 'William Conner' <William.Conner@noaa.gov>, 'Lois Schiffer'
<Lois.Schiffer@noaa.gov>, Craig.R.O'Connor@noaa.gov

> Brian and Jamon: Any news yet? I just want to keep others appraised
> of our
> efforts to get this information.
>
> Thanks, Bob
>
> Robert Haddad, Ph.D.
> Chief, Assessment & Restoration Division
> NOAA/Office of Response & Restoration
> Office: B6 Privacy
> Cell: B6 Privacy
> www.darrp.noaa.gov
> www.response.restoration.noaa.gov
>
>
> -----Original Message-----
> From: Brian Julius [
> Sent: Friday, May 21, 2010 6:11 PM
> To: Jamon Bollock
> Cc: William Conner; Robert Haddad
> Subject: Re: BP Oil Dispersants
>
> Jamon,
>
> I have heard from both Dr. Conner and Dr. Haddad, and none of us have
>
> received this information to date.
>
> - Brian
>
> Jamon Bollock wrote:
> > Dr. Conner and Mr. Julius,
> >

> > Lois Schiffer asked me to find out whether OR&R has received a list
> of
> > the constituent chemical ingredients in the dispersants being used
> by
> > BP. EPA informed me that the maker of the chemicals had agreed to
> > allow the information to be made public and that EPA's OSWER would
> > provide the list to NOAA. We want to make sure OR&R has the
> > information it needs.
> >
> > Could you please let me know if you've received the list and whether
>
> > it provides sufficient information? I also sent a message to Dr.
> > Haddad with the same question. Thanks.
> >
> > -Jamon
> >
> >
>
> --
> _____
> Brian Julius
> Deputy Director
> NOAA Office of Response and Restoration
> N/ORR, SSMC4, Rm. 10110
> 1305 East-West Highway
> Silver Spring, MD 20910
> Ph: B6 Privacy
> Cell: B6 Privacy
> Fax: B6 Privacy
> Email: brian.julius@noaa.gov
>
>
>

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: B6 Privacy
B B6 Privacy
fax: B6 Privacy

Received(Date): Sun, 30 May 2010 08:32:27 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Re: Fw: Pre-brief at 9:05 on Sunday
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>,Linda belton <Linda.Belton@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Westerholm Talking Points for Gov Call, 05.30.doc

Dave,

I know you don't need trajectory talking points, but I am attaching the latest tps on living marine resource issues in case that's helpful --- fisheries closure, impacts on turtles/mammals, etc.

This is from Monica's report out yesterday on Jindal's question:
Jindal asked me if we had seen less oil in our monitoring – he was hoping that the worst for LA coastline might be over. I told him that we were seeing less on the surface but that we could not draw any strong conclusions from that and then kicked it to the CG. Landry said the same thing – but cautioned again that this might be because of weather or dispersants or both.

Let me know if you need anything else!
Jainey
b6

Talking Points for Governors Call

Trajectory Status:

Loop Current (IF ASKED):
· Recent observations reported by NOAA indicate that over the past 48 hours, the Gulf loop current has shifted in a way that reduces the likelihood of oil-affected water being carried to the peninsula of Florida in the near term.
· As the northern part of the loop current detaches or pinches off and becomes a clockwise rotating eddy, the southern part of loop continues to flow easterly, traveling further away from the source of the spill.
· This "pinching" off of an eddy is a normal and frequent occurrence and is partially driven by winds, weather, and water temperatures.
· The Gulf Loop current is dynamic and always changing. Sometimes, the Current barely enters the Gulf of Mexico before heading towards the Atlantic. At other times, it may travel close (or within about 100 miles) to the coast of Louisiana before swinging back towards the Florida Strait.
· The St. Petersburg Unified Command has completed strategic plans to minimize any potential impacts should they occur and remains prepared to protect the shoreline.
· This is great news for Floridians and visitors who should continue to enjoy Florida's beaches and coastal businesses.
· Oil that may be entrained within the Loop current will continue to degrade over time as it flows through the current. The pinched-off eddy may reattach to the Loop current in a few weeks

so NOAA will continue to monitor the current and oil spill locations daily.

Fisheries Closure:
· The last modification to the fisheries closure area was made on Friday.
· The eastern and southern boundaries of the fisheries closure area were extended to encompass a substantial mass of noncontiguous sheen crossing the eastern edge of the previous boundary and the projected movement of a small portion of the slick outside the southern boundary.
· The closed area now represents 60,683 square miles, which is about 25 percent of Gulf of Mexico Federal waters. This leaves 75 percent of Gulf Federal waters still available for fishing.
· NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.
· NOAA will continue to provide daily updates at http://sero.nmfs.noaa.gov by 12 pm EST with any changes to the closed area effective as of 6 pm EST the same day.
· The six-hour window is meant to give fishermen time to retrieve their gear from an area that is about to close, and advance notice of areas that will soon open for fishing. A status message will be updated daily, even when closed area has not changed, and will also be available on NOAA Weather Radio and by calling NOAA Fisheries Southeast Regional Office at [redacted b6].

Seafood Safety:
NO UPDATE FOR GOVERNORS

Impacts to Marine Life:
· The total number of sea turtles verified since April 30 within the "designated spill area" is 240. Visible evidence of oil has been documented externally on 1 dead stranded sea turtle and 3 live collected sea turtles.
· The total number of sea turtle strandings that we have documented from the Louisiana/Texas border through the Florida panhandle since April 30th is much higher than the number of turtle strandings that have been documented in recent years during this time frame.
· To date, 25 dead dolphins have been verified since April 30 within the designated spill area. One of the dolphins had evidence of external oil.
· Since April 30th, the stranding rate of dolphins in Louisiana is higher than the historic number, but this may be a reflection of increased detection and reporting and the lingering effects of the earlier observed spike in strandings.

Florida Fisheries Disaster Declarations (IF ASKED):
· We are happy to work Governor Crist to evaluate the need to declare a fishery disaster in Florida in order to facilitate federal aid to fishermen.
· Last week, Secretary Locke announced a fishery disaster determination for the affected states of Louisiana, Mississippi and Alabama.
· Secretary Locke made this decision in response to requests from Governors Jindal and Barbour based on the loss of access to many fisheries and the existing and anticipated environmental damage from this unprecedented event. Also influencing the decision is the amount of oil spilled, the fact that the leaks have not been capped, and the wide scope of the spill and its anticipated expansion trajectories.
· This disaster determination will help ensure that the Federal government is in a position to

mobilize the range of assistance that fishermen and fishing communities may need.

Dave.Westerholm wrote:

> Linda,
> It will be me and not Dave Kennedy on the call today. Dave will do it tomorrow.
> How did we answer the question by Jindal about intensity of oil?
> Dave
>
> Linda Belton wrote:
>
> > **From**: McGrath, Shaun L. <Shaun_L._McGrath@who.eop.gov>
> > **To**: McGrath, Shaun L. <Shaun_L._McGrath@who.eop.gov>; Belton, Linda <Linda.Belton@noaa.gov>; Monica Medina <Monica.Medina@noaa.gov>; heather.smith1@dhs.gov <heather.smith1@dhs.gov>; Tennyson, Stephanie L <Stephanie.Tennyson@dhs.gov>; Pallone.Sarah@epamail.epa.gov <Pallone.Sarah@epamail.epa.gov>; Lori_Faeth <Lori_Faeth@ios.doi.gov>; Kayyem, Juliette <Juliette.Kayyem@dhs.gov>; Murk, David CDR <David.W.Murk@uscg.dhs.gov>; Moilanen, Stephen S. <Stephen_S._Moilanen@who.eop.gov>; Mark.G.Moland@uscg.mil <Mark.G.Moland@uscg.mil>; Tate, Gail <gail.tate@dhs.gov>; Munoz, Cecilia <Cecilia_Munoz@who.eop.gov>; Wareing, Tracy <Tracy.Wareing@dhs.gov>
> > **Sent**: Sat May 29 17:59:38 2010
> > **Subject**: Pre-brief at 9:05 on Sunday
> >
> > All,
> >
> > Daft agenda for the pre-call tomorrow is below. Please let me know if there are any changes.
> >
> > Sunday, May 30 Call with Governors
> >
> > 9:05 a.m. pre-brief; 9:15 Governors
> >
> > **1-** b6
> >
> > **HOST Pin:** b6 **– Speakers**

[Guest Pin: 28899]

Please let me know if there are any changes to the speakers below. Also, please be prepared to cover the action items that came up on yesterday's call.

DRAFT AGENDA

Call with Governors – 9:05 a.m. pre-brief; 9:15 Governor

· Opening remarks (Valerie Jarrett)

· Observations and Trajectory – **David Kennedy, NOAA**

o NOAA will provide the latest observations and trajectories

o Jindal— are you seeing decrease in the intensity of the heavy oil (due to skimming and dispersants) -- Gov is trying to anticipate oil that may come ashore over the next 2 weeks

· Situation &Leak Stabilization Update – **RADM Peter Neffenger, NIC**

o Peter— Top Kill – we will know today whether successful. Peter will notify Govs when that decision is made

§ Alternatives if unsuccessful: 1) Cut riser and either cap or hat (depending on if it is a clean cut) (72-96 hours); 2) BOP (will work concurrently with cap, total time unclear to put in place); 3) valve

o Jindal— when doing BOP, do you have to remove cap? (how much flow will there be when doing these procedures?)

o Peter— Laid out the 4 questions that they will be considering when working this weekend to validate the berm project. We will

have a decision on that by Tuesday.

o Jindal— His interpretation of POTUS directive was only one criterion: does it stop the oil? If yes, then let's make BP pay for it (and do the other 5 projects) Peter agreed

o Jindal— (He has already communicated these to BP)

§ Veterinarians are not being allowed to do search and rescue

§ Gov wants BP to start dredging immediately on the first berm project that was approved

§ BP's onerous liability waiver – we fixed it with BP, but now some of their sub-contractors are including it. (ex: AL contractor) VJ suggested that Gov have his AG talk to the US Atty.

· Operations Report – **RADM Mary Landry, UAC**

o Response Plans and Boom

o Landry— talked to Doug Suttles about Jindal's suggestion on Thursday that BP should make a line of credit available to local governments that are running into cash flow problems. Jindal said he expected Suttles to call yesterday, but will call him today to discuss.

· Update on Claims process – **Tracy Wareing, Lead, Integrated Services Team**

o Small business claims

o Appeals process

· Open discussion and Q&A with Governors and state officials

· Next call – 9:15 a.m. EDT (8:15 CDT) Monday, May 31, 2010

Talking Points for Governors Call

Trajectory Status:

Loop Current (IF ASKED):

- Recent observations reported by NOAA indicate that over the past 48 hours, the Gulf loop current has shifted in a way that reduces the likelihood of oil-affected water being carried to the peninsula of Florida in the near term.
- As the northern part of the loop current detaches or pinches off and becomes a clockwise rotating eddy, the southern part of loop continues to flow easterly, traveling further away from the source of the spill.
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- The St. Petersburg Unified Command has completed strategic plans to minimize any potential impacts should they occur and remains prepared to protect the shoreline.
- This is great news for Floridians and visitors who should continue to enjoy Florida's beaches and coastal businesses.

Document ID: 0.7.19.1251.1

- Oil that may be entrained within the Loop current will continue to degrade over time as it flows through the current. The pinched-off eddy may reattach to the Loop current in a few weeks so NOAA will continue to monitor the current and oil spill locations daily.

Fisheries Closure:

- The last modification to the fisheries closure area was made on Friday.
- The eastern and southern boundaries of the fisheries closure area were extended to encompass a substantial mass of noncontiguous sheen crossing the eastern edge of the previous boundary and the projected movement of a small portion of the slick outside the southern boundary.
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Document ID: 0.7.19.1251.1

also be available on NOAA Weather Radio and by calling NOAA Fisheries Southeast Regional Office at [redacted b6].

Seafood Safety:

NO UPDATE FOR GOVERNORS

Impacts to Marine Life:

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- Since April 30th, the stranding rate of dolphins in Louisiana is higher than the historic number, but this may be a reflection of increased detection and reporting and the lingering effects of the earlier observed spike in strandings.

Florida Fisheries Disaster Declarations (IF ASKED):

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Document ID: 0.7.19.1251.1

- Last week, Secretary Locke announced a fishery disaster determination for the affected states of Louisiana, Mississippi and Alabama.
- Secretary Locke made this decision in response to requests from Governors Jindal and Barbour based on the loss of access to many fisheries and the existing and anticipated environmental damage from this unprecedented event. Also influencing the decision is the amount of oil spilled, the fact that the leaks have not been capped, and the wide scope of the spill and its anticipated expansion trajectories.
- This disaster determination will help ensure that the Federal government is in a position to mobilize the range of assistance that fishermen and fishing communities may need.

Document ID: 0.7.19.1251.1

Received(Date): Sun, 30 May 2010 10:24:06 -0400
From: "william.conner" <William.Conner@noaa.gov>
Subject: Prep for NRT Meeting, May 30, 2010
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Ken Barton <Ken.Barton@noaa.gov>
NRT Agenda 30 May 1100 mtg.doc

For Official Use Only

May 30, 2010
National Response Team Meeting at 1100:

Call in Number: 1-[redacted] and participation pin is: [redacted b6]
Please dial in 15 minutes before the call for a roll call starting at 10-minutes before the scheduled start time.

NOAA SSC Charlie Henry will be with RADM Landry at the Unified Area Command in Robert, LA. Any detailed or technical questions may be referred to him.

DOC/NOAA Objectives for the Meeting:

1. Convey substantive messages about NOAA involvement in the response.
2. Acquire current status of response, coordination and outreach efforts.
3. Answer questions on NOAA activities and products.

The agenda for the NRT meeting is attached. There are no agenda items assigned to NOAA and the agency does not have a priority message to convey at today's meeting.

The following NOAA products have been distributed to the NRT agencies prior to the meeting:

- Most recent Spot Weather Forecast
- Coastal trajectory prediction for location of surface oil with 72-hour outlook
- Offshore trajectory prediction for location of surface oil with 72-hour outlook
- Shoreline Impact Outlook showing likely new landfalls of oil over the coming 5 days

Overview of NOAA products

- Weather
  - Light winds will continue from the S and SW through Tuesday. Seas will be calm with a light chop. Isolated thunderstorms may disrupt spill operations late in the day.
- Coastal Trajectory
  - Southerly winds will tend to push the oil back onshore with fresh deposits possible on the east or west sides of the Delta. Note that heavy parts of the slick are proximate to the tip of the Delta and west side. By mid-week, it is possible that oil could spread to the east, possibly involving the Mobile Bay area and even Pensacola (see Coastal Impact Outlook).

- Loop Current with Offshore Trajectory (not updated today)

  - The northern part of the LC remains separated, and has formed a large clockwise

eddy over 100 miles south of the spill site. As a result, any small amounts of oil that may reach this eddy will be moved in a large circular pattern in the middle of the Gulf, and not threaten any shorelines. There is also minimal risk of the LC serving as a significant mechanism to transport oil toward any shorelines and there is no evidence to suggest significant amounts of oil are moving toward the LC. The eddy discussed above will likely re-attach to the Loop Current over the next week or two. Only non-contiguous sheens and scattered tarballs are visible in this eddy.

Agenda Item: Polling of NRT Secretaries

No priority messages have been identified for NOAA to contribute. --

William G. Conner, Ph.D.
Chief, HAZMAT Emergency Response Division
NOAA Office of Response and Restoration
Phone: [redacted] (190)
Cell: [redacted]

BP Oil Spill Response – Gulf of Mexico Incident
National Response Team (NRT) Phone Conference Meeting

AGENDA

Conference call-in phone number: 1-[redacted] and participation pin is [redacted b6]
May 30, 2010 11:00 AM EDT

Objective: Secretary Napolitano and the National Incident Commander (NIC) have requested a conference call with NRT Agency Heads (Secretary Level) today at 11:00 AM EDT. This meeting should last no longer than 30 minutes.

Audience: NRT Agency Heads (Secretary Level) plus one member. Regional Response Team IV and VI Co-Chairs may call in.

May 30, 2010

Call In	
Roll Call	USCG
Significant Activities	NIC
SubSurface Response Status	
On Water Recovery Status	
Shoreline Response Status	
Weather/Oil Trajectories	
Polling of NRT Secretaries	USCG
Communication Update	OPA
Legal Affairs Update	OGC
Intergovernmental Affairs Update	IGA
Congressional Affairs Update	OLA
Secretary's Closing Remarks	S-1
Meeting Adjourned	

Document ID: 0.7.19.525.1

Received(Date): Sun, 30 May 2010 11:26:53 -0400
From: David Holst <David.Holst@noaa.gov>
Subject: Notes from May 30, 11 AM NRT Mtg
To: _NOAA HQ leadership <NOAAHQ.Leadership@noaa.gov>, Policy.Contacts@noaa.gov,PCO.Contacts@noaa.gov, "Deepwater NOAA Support (dwh.staff@noaa.gov)"<dwh.staff@noaa.gov>, David Kennedy <David.Kennedy@noaa.gov>,"Sarri, Kristen" <KSarri@doc.gov>,Timothy Gallagher <timothy.gallagher@noaa.gov>

Below are notes from the May 30, 11 AM NRT call

FOR OFFICIAL USE ONLY

National Response Team Call
May 30 2010
11:00 AM

The next NRT meeting is May 31 at11 AM.

Situation Status:

- Moving to "Top Hat" or "Top Cap" approach. Making preparations for cutting the riser pipe. Depending on how clean the cut is will determine whether "Top Hat" (containment device) or "Top Cap" (cap on pipe) will be used.
- The flow rate will increase 20-25% after the riser pipe is cut because the kink in the riser pipe restricted some flow. It will take 2-3 days to insert the "Top Hat" or "Top Cap". In that time, there will be uncontained release of oil for 2-3 days.
- The relief well is 10 ahead of schedule. Currently the scheduled completion day is late July.
- Developing contingency plan for hurricanes
- Adm Allen indicated that a plan is being developed to apply more resources to the area. Also continuing to work on the barrier island issue.
- There were 8 in-situ burns yesterday. More burns scheduled for today.
- 14,000 gallons of subsea dispersants applied yesterday

Intergovernmental Affairs Update:

- Getting message out to Parrish presidents on expectations with increased flow for the next 2-3 days
- Workig with HHS and OSHA on issue of workers getting ill.

Communication:

- The main message today was the issue of increased flow for the next several days before the caps are installed. This was discussed on several morning talk shows today.

Received(Date): Sun, 30 May 2010 16:59:33 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Science Box Daily Report May 30
To: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,Beth Dieveney <Beth.Dieveney@noaa.gov>, Robert Haddad <Robert.Haddad@noaa.gov>
science Box Daily Report 30 May.doc

see attached

Daily Report

May 30, 2010

NOAA DWH MS252 "Science Box"

- Notification this day that with the failure of "top kill" NOAA ship GORDON GUNTER was granted access to use its sonar gear to within 5 nm of the well head. The vessel is currently surveying at the 5 mile boundary in an octagonal pattern to better characterize returns in the water column, and using its other capabilities to define the source of those signals.

- This morning, Science Box leadership Adm. Kenul, CO THOMAS JEFFERSON, OCS and Unified Command personnel met via conference call to better define the strategy for the TJ cruise for sub-surface oil/dispersant detection. Cruise will focus on sampling from Southwest Pass (its point of entry into the Gulf) where a report from LSU had found subsurface oil several miles offshore. The vessel will use acoustics and its water sampling capability supplied by WHOI to map the potential existence of sub-surface "plumes"

- NOAA proposed to EPA and USGS the set up of a Joint Assessment Group (JAG) to evaluate existing oceanography and sub surface oil data and provide visualization and information to Unified Command. NOAA members include OAR, NESDIS, NOS and OMAO personnel. Proposal is informally at the NIC and is being analyzed by EPA an USGS leadership

Document ID: 0.7.19.511.1

Received(Date): Tue, 01 Jun 2010 03:15:30 -0400
From: "Robert.Haddad" <Robert.Haddad@noaa.gov>
Subject: PowerPoint for Dr. L
To: 'Beth Dieveney' <Beth.Dieveney@noaa.gov>,'_HQ Deep Water Horizon Staff' <dwh.staff@noaa.gov>,'Steve Murawski' <Steve.Murawski@noaa.gov>
Science Summit Workshop-v1.ppt

I'm hoping Steve can scare up some newer figures – especially of the GG work. And maybe we'll have some of the Brooks-McCall visualized by Thursday??? Talking points are embedded in slides. Feel free to revise as you see fit, Beth.

Robert Haddad, Ph.D.

Chief, Assessment & Restoration Division

NOAA/Office of Response & Restoration

Office: 301.713.4248x110

Cell: 240.328.9085

www.darrp.noaa.gov

www.response.restoration.noaa.gov

Science Summary Related to the DWH OIL SPILL

NOAA

June 3, 2010

YOUR LOGO HERE

DRAFT - FOR INTER-AGENCY PLANNING USE ONLY

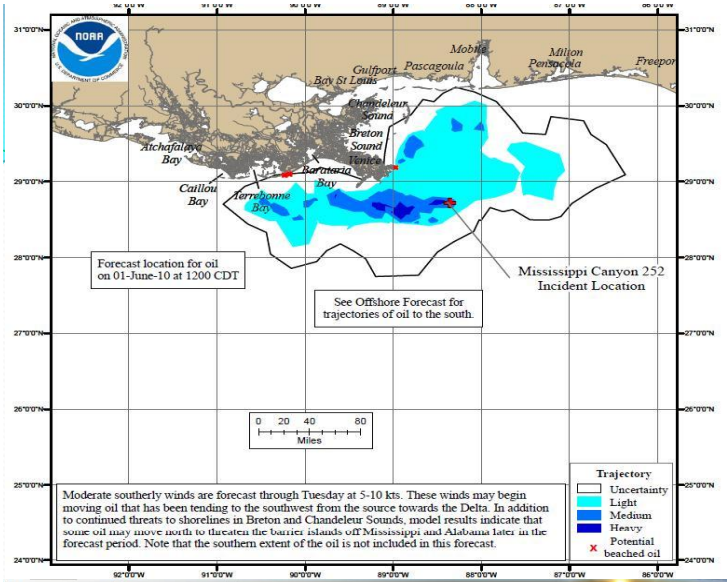
Document ID: 0.7.19.1397.1

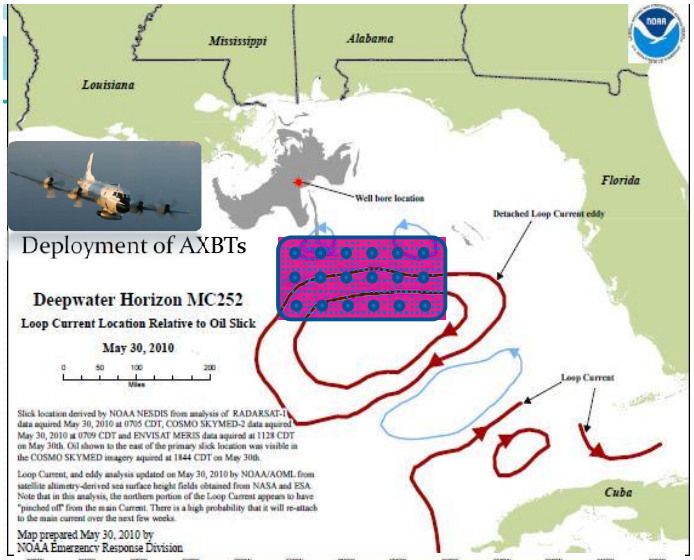
Immediate Science Actions (First 2 months?)

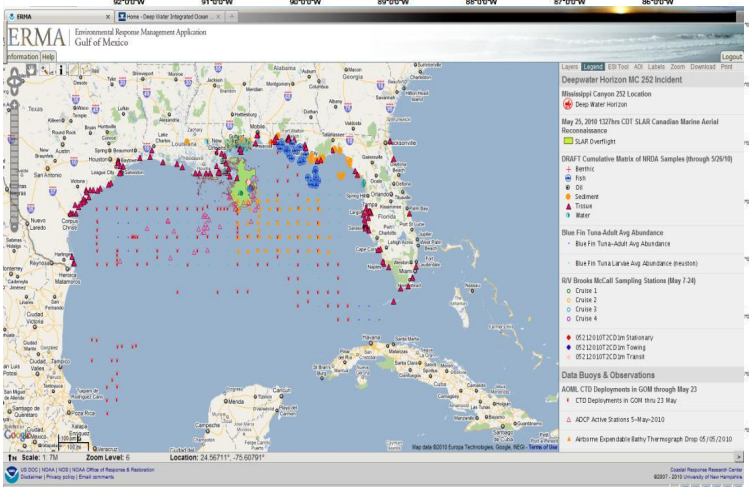
- Scientific support to the IC through the USCG FSOC
- Collection of a broad suite of samples to assess baseline environmental conditions
- Assess the Safety of Seafood and inform appropriate closures of federal waters
- Evaluate dispersant and oil related to seafood safety – conduct baseline contaminant studies
- Calculate oil flow from the DWH site to estimate total release of oil
- Track surface oil and dispersant fate and transport
- Initial studies on effects of dispersants on marine organisms
- Initiate and participate in interagency Joint Analysis Group (JAG)
- Measure impact of subsea dispersed oil on hypoxia events
- Measure distribution and magnitude of subsurface dispersed oil and dispersant through acoustics, fluorescence studies, water sampling and other technologies using NOAA Research Vessels and partners, including IOOS
- Conduct aerial surveys of protected species distribution and abundance
- Update increased sensitivity of the Loop Current hydrodynamics – P-3s dropping AXBTs, sponsoring oceanographic cruises
- Conduct baseline studies of natural resources (water, sediment, biota, human use)
- Develop/Conduct studies to measure injuries of trust resources (water, sediment, biota, human use) by oil and or response actions

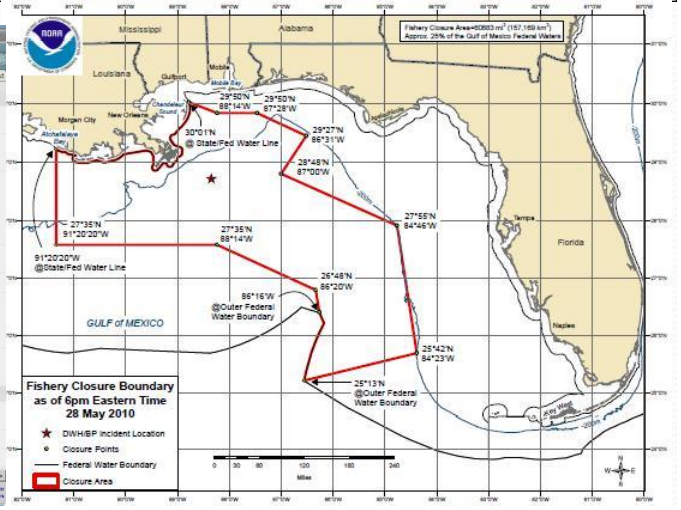
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Document ID: 0.7.19.1397.1

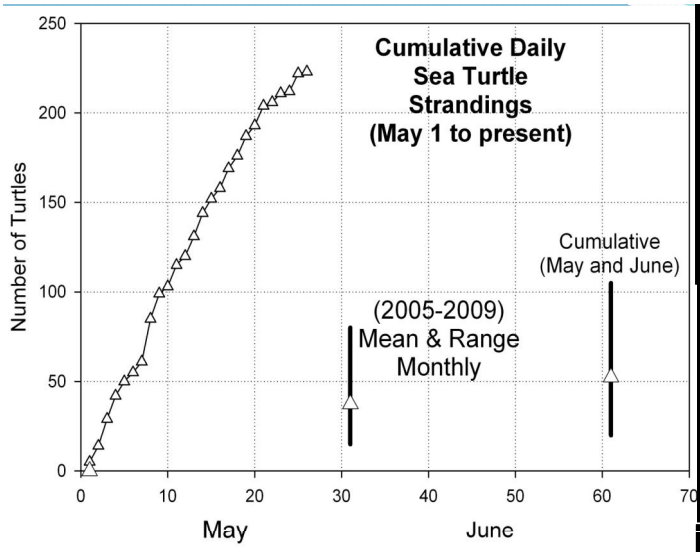






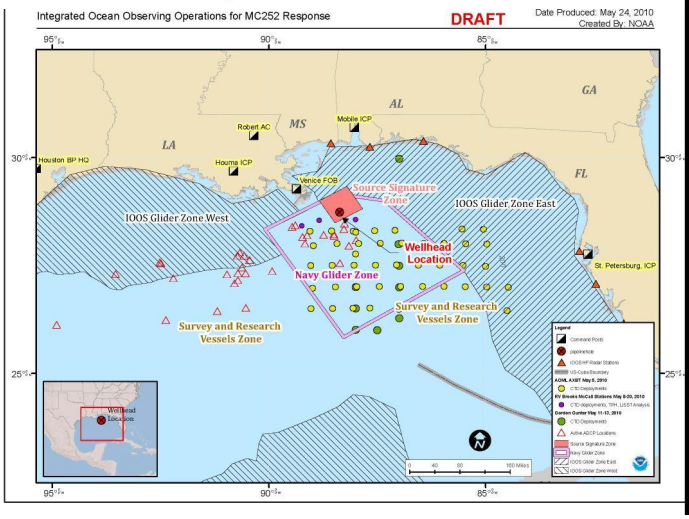


Document ID: 0.7.19.1397.1


Cumulative Daily
Sea Turtle
Strandings
(May 1 to present)
Number of Turtles
250
200
150
100
50
0
0
10
20
30
40
50
60
70
May
June
Cumulative
(May and June)
(2005-2009)
Mean & Range
Monthly



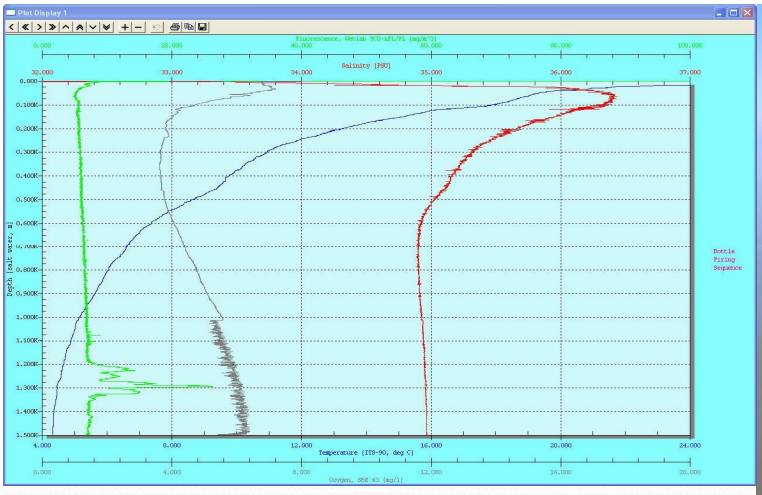

From BP

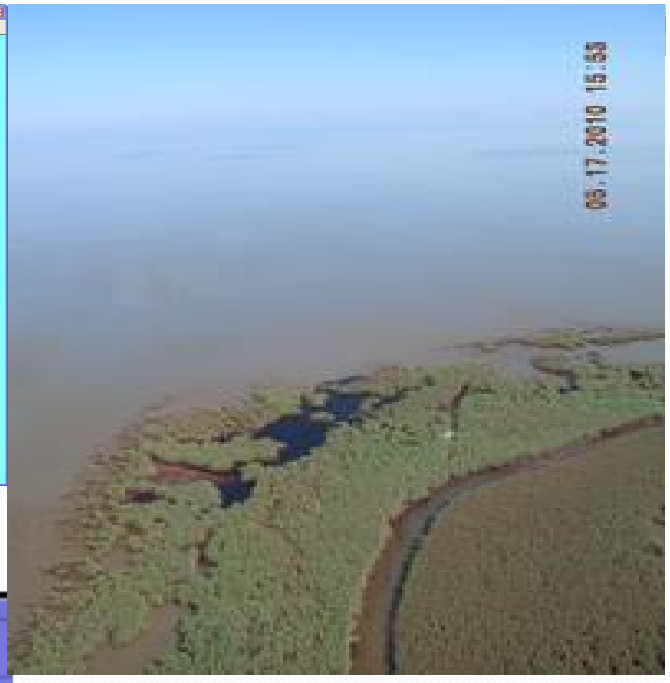

Integrated Ocean Observing Operations for MC252 Response
DRAFT
Date Produced: May 24, 2010
Created By: NOAA
LA
MS
AL
GA
FL
Robert AC
Mobile ICP
Houma ICP
Houston BP HQ
Venice FOB
Source Signature Zone
IOOS Glider Zone West
IOOS Glider Zone East
Wellhead Location
Navy Glider Zone
Survey and Research Vessels Zone
Survey and Research Vessels Zone
St. Petersburg, ICP

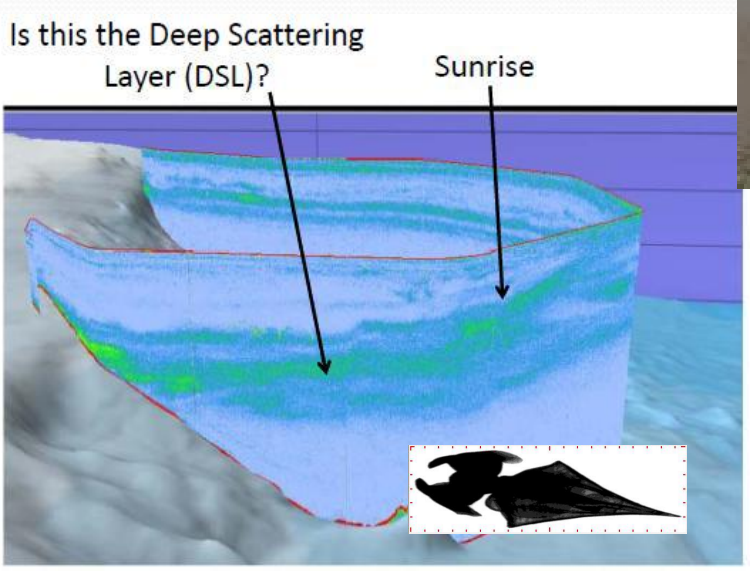
Near-Term Science Actions 1-6 months)

- Continued scientific support to the IC through USCG Federal On-Scene Coordinator (including trajectory predictions, Loop Current evaluation, predicted shore line impacts, etc.).
- Mass balance calculations to understand surface and sub-surface fractions of total release
- Continued assessment of shoreline oil impacts and support for scientifically appropriate clean-up actions.
- Continued surveys to assess the magnitude, characteristics, fate, transport and near-term effects of subsurface dispersed oil
- Longitudinal surveys of potential oil and dispersants in seafood species in closed and open areas
- Identification and initiation of studies to quantify natural resource injuries
- Additional human dimensions studies to understand the impact of the event on coastal communities

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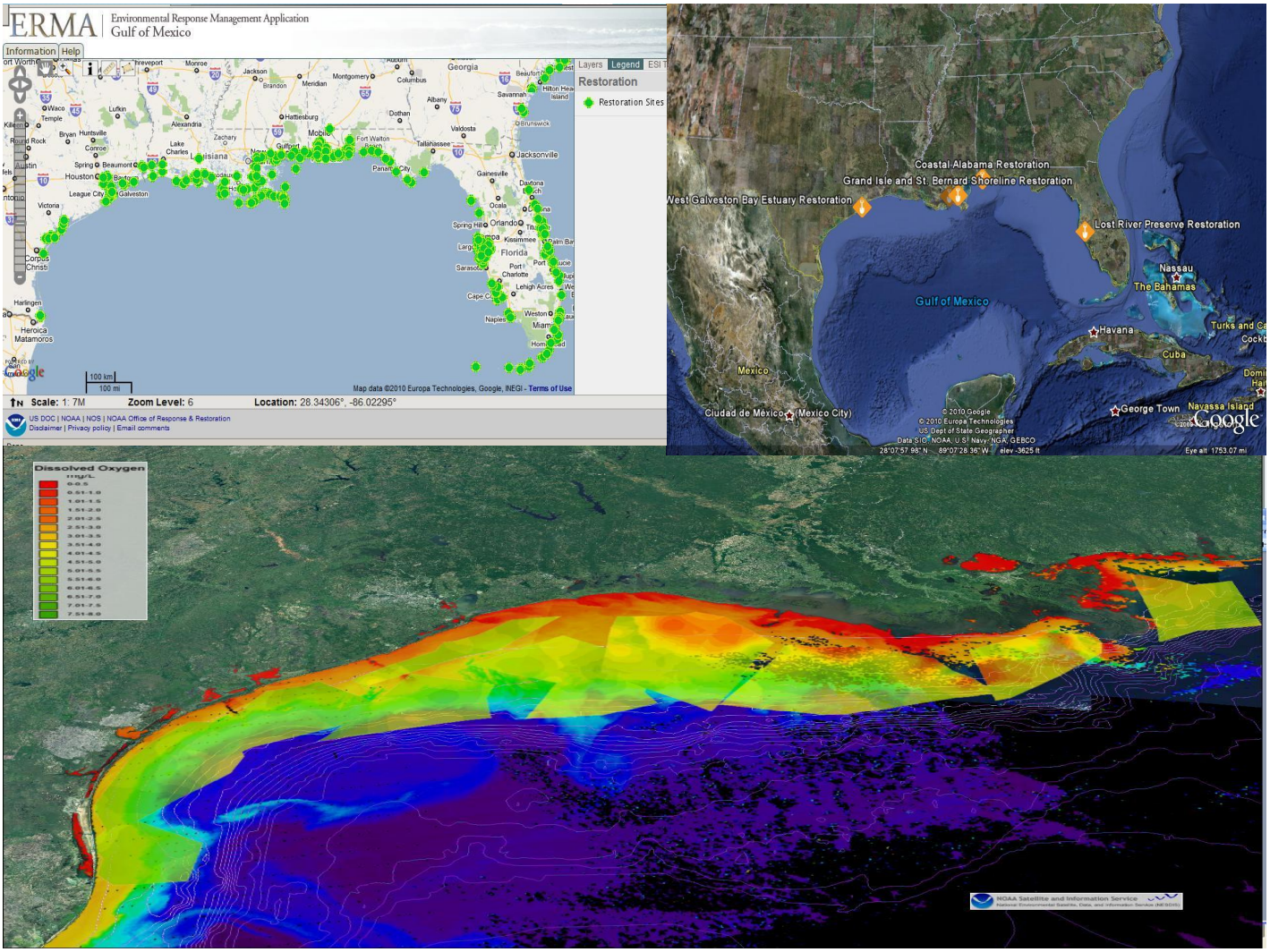

Is this the Deep Scattering Layer (DSL)?
Sunrise

Long-Term Science Actions (2 mos. to decades)

- Ecosystem-level Impacts of the spill
  - Impacts of the spill on productivity, nutrient cycling and species composition near and off-shore habitats
  - Impacts of the spill on productivity, nutrient cycling and species composition of Louisiana marshes
- Development and implementation of ecosystem-level restoration opportunities for the Northern Gulf of Mexico
- Studies to identify on long-term effects of introduction of tons of reduced carbon into the Gulf ecosystem
  - Effects on Hypoxia distribution and seasonality in the GOM
  - Effects on HABs and other human health pathogens
- Mid to long term socio-economic impacts of the spill on coastal Gulf Coast States

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Document ID: 0.7.19.1397.1


ERMA
Environmental Response Management Application
Gulf of Mexico
Information
Help
Layers
Legend
Restoration
Restoration Sites
Scale: 1: 7M
Zoom Level: 6
Location: 28.34306°, -86.02295°
US DOC | NOAA | NOS | NOAA Office of Response & Restoration
Disclaimer | Privacy policy | Email comments
Map data ©2010 Europa Technologies, Google, INEGI - Terms of Use
Coastal Alabama Restoration
Grand Isle and St. Bernard Shoreline Restoration
West Galveston Bay Estuary Restoration
Lost River Preserve Restoration
Gulf of Mexico
Nassau
The Bahamas
Havana
Cuba
Mexico
Ciudad de México (Mexico City)
George Town
Navassa Island
© 2010 Google
© 2010 Europa Technologies
US Dept of State Geographer
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Eye alt 1753.07 mi
Dissolved Oxygen
mg/L
NOAA Satellite and Information Service

Received(Date): Wed, 02 Jun 2010 14:25:16 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: RE: ASAP: FOR CLEARANCE: revised fishery closure
To: "Rapp, John" <John.Rapp@noaa.gov>
Cc: "Miller, David P" <David.P.Miller@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, "Denit, Kelly" <Kelly.Denit@noaa.gov>,"Kondel, Jessica" <Jessica.Kondel@noaa.gov>,"Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>, "Rauch, Samuel" <Samuel.Rauch@noaa.gov>
image001.jpg

OK, I just want to make sure we are covered.

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Wednesday, June 02, 2010 2:13 PM
To: Sarri, Kristen
Cc: Miller, David P; Gilson, Shannon; Denit, Kelly; Kondel, Jessica; Lugo, Lauren; Oliver, John; Rauch, Samuel
Subject: Re: ASAP: FOR CLEARANCE: revised fishery closure

Kris,

Looping in Sam, but re-opening a closed area because it was never oiled is consistent with our approach. To my knowledge, it happened one other time along the Western boundary.

John

Sarri, Kristen wrote:

Confirming that reopening is consistent with protocol. Can someone confirm?

From: David Miller [mailto:David.P.Miller@noaa.gov]
Sent: Wednesday, June 02, 2010 1:44 PM
To: Gilson, Shannon
Cc: Sarri, Kristen; Denit, Kelly; Kondel, Jessica
Subject: Re: FOR CLEARANCE: revised fishery closure

Shannon I added a sentence to the first paragraph referring to seafood safety. That language has appeared in earlier releases.

Gilson, Shannon wrote:

Ok. Does this mean the group is comfortable with me sending to OMB? Kelly, Kris?

From: David Miller [mailto:David.P.Miller@noaa.gov]
Sent: Wednesday, June 02, 2010 12:56 PM
To: Gilson, Shannon
Cc: Sarri, Kristen; Denit, Kelly; Kondel, Jessica; Smullen, Scott; Kenney, Justin
Subject: Re: FOR CLEARANCE: revised fishery closure

The reopened area is a section that was initially in the trajectory zone - the spill did not enter that location.

Gilson, Shannon wrote:

Yes. I though the re-opening protocol was still under review…

NOAA Expands Fishing Closed Area in Gulf of Mexico

NOAA has expanded some boundaries of the closed fishing area in the Gulf of Mexico to capture portions of the slick moving beyond the current boundaries – the most significant expansion includes an area off southwest Florida that covers waters just to the west of the Dry Tortugas.

Additionally, the agency reopened a 2,637 square mile area of the western-most boundary south of Louisiana. Oil was projected to be in this area, but was never actually observed there

This federal closure does not apply to any state waters. Closing fishing in these areas is a precautionary measure to ensure that seafood from the Gulf will remain safe for consumers.

The closed area now represents 88,502 square miles, which is approximately 37 percent of Gulf of Mexico federal waters. This leaves more than 63 percent of Gulf federal waters available for fishing. The closure will be effective at 6:00 p.m. EDT.

Details can be found at http://sero.nmfs.noaa.gov/. The last closed area modification was June 1, when 75,920 square miles were closed to fishing, or roughly 31 percent of federal waters of the Gulf.

The federal and state governments have systems in place to test and monitor seafood safety, prohibit harvesting from affected areas, and keep oiled products out of the marketplace. NOAA continues to work closely with the U.S. Food and Drug Administration and the states to ensure seafood safety, by closing fishing areas where tainted seafood could potentially be caught, and assessing whether seafood is tainted or contaminated to levels that pose a risk to human health. NOAA and FDA are working to implement a broad-scaled seafood sampling plan. The plan includes sampling seafood from inside and outside the closure area, as well as dockside- and market-based sampling.

According to NOAA, there are approximately 5.7 million recreational fishermen in the Gulf of Mexico region who took 25 million fishing trips in 2008. Commercial fishermen in the Gulf harvested more than one billion pounds of fish and shellfish in 2008.

Fishermen who wish to contact BP about a claim should call 800-440-0858.

NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.

NOAA has a number of new methods for the public to obtain information or be notified when there is a change to the closed area:

Sign up to receive Southeast Fishery Bulletins by email at SERO.Communications.Comments@noaa.gov

Call 1-800-627-NOAA (1-800-627-6622) to hear a recording of the current coordinates

Listen to NOAA Weather Radio for messages about the closure

Receive text messages on your cell phone about changes to the closed area by texting

fishing@gulf to 84469 (visit http://www.deepwaterhorizonresponse.com/go/doc/2931/558107 for more information)

Follow us on Twitter: usnoaagov to get a tweet when the closed area changes

NOAA's mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources. Visit us at http://www.noaa.gov or on Facebook at http://www.facebook.com/usnoaagov

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From: Sarri, Kristen
Sent: Wednesday, June 02, 2010 12:27 PM
To: Gilson, Shannon; Denit, Kelly; Miller, David P
Cc: Kondel, Jessica
Subject: RE: FOR CLEARANCE: revised fishery closure

Can I see release? I am not aware of any reopening.

From: Gilson, Shannon
Sent: Wednesday, June 02, 2010 12:25 PM
To: Denit, Kelly; Miller, David P
Cc: Kondel, Jessica; Sarri, Kristen
Subject: RE: FOR CLEARANCE: revised fishery closure

Adding Kris.

From: Kelly Denit [mailto:Kelly.Denit@noaa.gov]
Sent: Wednesday, June 02, 2010 12:23 PM
To: Miller, David P
Cc: Kondel, Jessica; Gilson, Shannon
Subject: Re: FOR CLEARANCE: revised fishery closure

This release says we are re-opening an area.

1) Is that correct?
2) If that is correct, we will need to explain the re-opening protocol that was used to re-open that area. I thought we were not ready to re-open areas yet, but I may not have the latest info.

Cheers,
Kelly

David Miller wrote:

The attached release is being cleared for distribution this afternoon. Please advise soonest. Thanks.

--

-- Kelly DenitNOAA Policy OfficeOffice of the Under Secretary of Commerce for Oceans and Atmosphere14th & Constitution Ave., NW, Room 5811Washington, DC 20230 phone: B6 Privacy cell: B6 Privacy fax: B6 Privacy

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NOAA

Received(Date): Wed, 02 Jun 2010 14:45:45 -0400
From: "Sarri, Kristen" <KSarri@doc.gov>
Subject: RE: ASAP: FOR CLEARANCE: revised fishery closure
To: "Rauch, Samuel" <Samuel.Rauch@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>
Cc: "Miller, David P" <David.P.Miller@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, "Denit, Kelly" <Kelly.Denit@noaa.gov>,"Kondel, Jessica" <Jessica.Kondel@noaa.gov>,"Lugo, Lauren" <Lauren.B.Lugo@noaa.gov>, "Oliver, John" <John.Oliver@noaa.gov>
image001.jpg

Thanks.

From: Samuel Rauch [mailto:Samuel.Rauch@noaa.gov]
Sent: Wednesday, June 02, 2010 2:32 PM
To: Rapp, John
Cc: Sarri, Kristen; Miller, David P; Gilson, Shannon; Denit, Kelly; Kondel, Jessica; Lugo, Lauren; Oliver, John
Subject: Re: ASAP: FOR CLEARANCE: revised fishery closure

That is correct. We close areas prospectively based on 48-72 hour projections of where the oil will likely occur. Due to changing winds, etc., those projections have been occasionally inaccurate and oil never appeared in a closed area. Our process from the beginning has been to reopen those "never oiled" areas without testing. That process is also set forth in our protocol which states: "After confirming through subsequent evaluation (e.g. water quality sampling, remote sensing) that oil did not enter the buffer zone, the area may be re-opened without subsequent seafood samples to evaluation under this protocol." The "buffer zone" in this context is an area that we have closed anticipating the future presence of oil. So if oil doesn't appear, we can open that buffer zone area without testing.

John Rapp wrote:

Kris,

Looping in Sam, but re-opening a closed area because it was never oiled is consistent with our approach. To my knowledge, it happened one other time along the Western boundary.

John

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Follow us on Twitter: usnoaagov to get a tweet when the closed area changes

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Cc: Kondel, Jessica
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Sent: Wednesday, June 02, 2010 12:23 PM
To: Miller, David P
Cc: Kondel, Jessica; Gilson, Shannon
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Kelly

David Miller wrote:

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--



-- Kelly DenitNOAA Policy OfficeOffice of the Under Secretary of Commerce for Oceans and Atmosphere14th & Constitution Ave., NW, Room 5811Washington, DC 20230 phone: B6 Privacy cell: B6 Privacy fax: B6 Privacy

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NOAA

Received(Date): Wed, 02 Jun 2010 15:14:44 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: presentation
To: "john.r >> \"'John.Rapp@noaa.gov'\"" <John.Rapp@noaa.gov>

with Steve's comment

Have not socialized the dispersant issues with EPA but there are no conclusions there just the questions we all have. These are Lisa Jackson's questions as well and I do not think they at EPA object the larger community thinking about them.

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: B6 Privacy
cell: B6 Privacy
fax: B6 Privacy

Science Summary Related to the DWH-MC-252 OIL SPILL

NOAA

June 3, 2010

Dr. Jane Lubchenco, Administrator

Science Summary Related to the DWH-MC-252 OIL SPILL

NOAA

June 3, 2010

Dr. Jane Lubchenco, Administrator

Document ID: 0.7.19.1403.1

Immediate Science Actions (First 2 months)

- Scientific support to the IC through the USCG FSOC
- Collection of a broad suite of samples to assess baseline environmental conditions
- Assess the Safety of Seafood and inform appropriate closures of federal waters
- Evaluate dispersant and oil related to seafood safety – conduct baseline contaminant studies
- Assist to calculate oil flow from the DWH site to estimate total release of oil
- Track surface oil and dispersant fate and transport
- Initial studies on effects of dispersants on marine organisms
- Initiate and participate in interagency Joint Analysis Group (JAG)
- Measure impact of subsea dispersed oil on hypoxia events
- Measure distribution and magnitude of subsurface dispersed oil and dispersant through acoustics, fluorescence studies, water sampling and other technologies using NOAA Research Vessels and partners, including IOOS
- Conduct aerial surveys of protected species distribution and abundance
- Update increased sensitivity of the Loop Current hydrodynamics – P-3s dropping AXBTs, sponsoring oceanographic cruises
- Conduct baseline studies of natural resources (water, sediment, biota, human use)
- Develop/Conduct studies to measure injuries of trust resources (water, sediment, biota, human use) by oil and or response actions
- Daily-weekly weather forecasts critical for field operations

Document ID: 0.7.19.1403.1

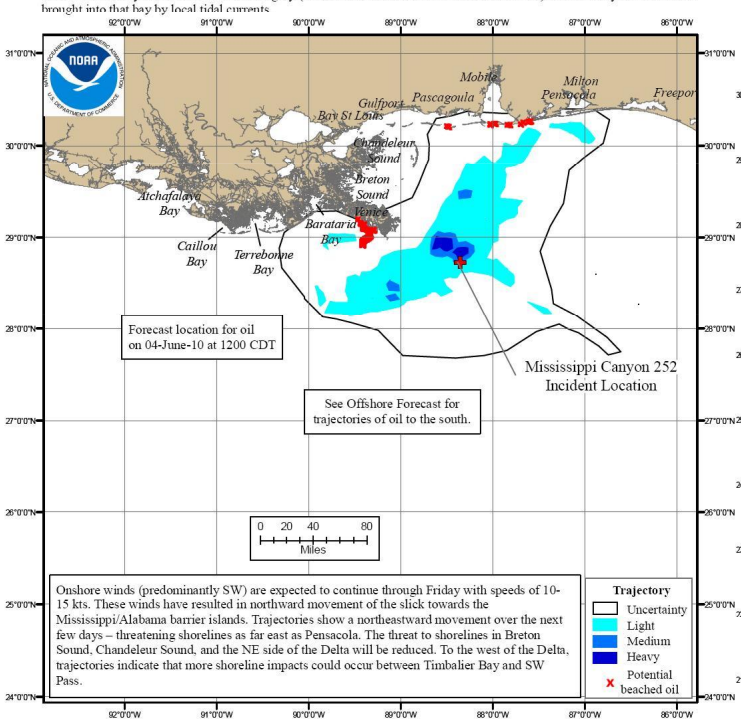
Daily Surface Oil Forecasts

Nearshore Surface Oil Forecast Deepwater Horizon MC252

NOAA/NOS/OR&R **Nearshore**

Estimate for: 1200 CDT, Friday, 6/04/10
Date Prepared: 2100 CDT, Tuesday, 6/01/10

This forecast is based on the NWS spot forecast from Tuesday, June 1 PM. Currents were obtained from several models (NOAA Gulf of Mexico, West Florida Shelf/USF, NAVO/NRL) and HFR measurements. The model was initialized from Tuesday satellite imagery analysis (NOAA/NESDIS) and overflight observations. The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization). Oil near bay inlets could be brought into that bay by local tidal currents.



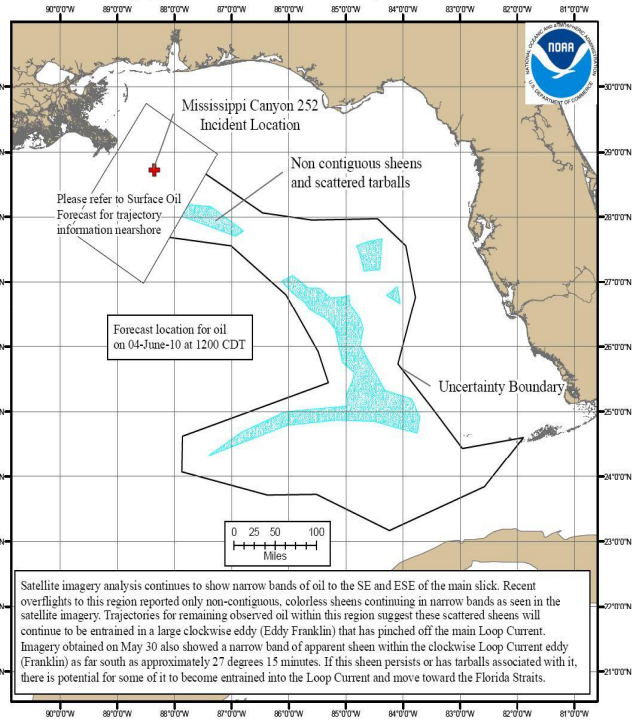
Onshore winds (predominantly SW) are expected to continue through Friday with speeds of 10-15 kts. These winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands. Trajectories show a northeastward movement over the next few days – threatening shorelines as far east as Pensacola. The threat to shorelines in Breton Sound, Chandeleur Sound, and the NE side of the Delta will be reduced. To the west of the Delta, trajectories indicate that more shoreline impacts could occur between Timbalier Bay and SW Pass.

Offshore Surface Oil Forecast Deepwater Horizon MC252

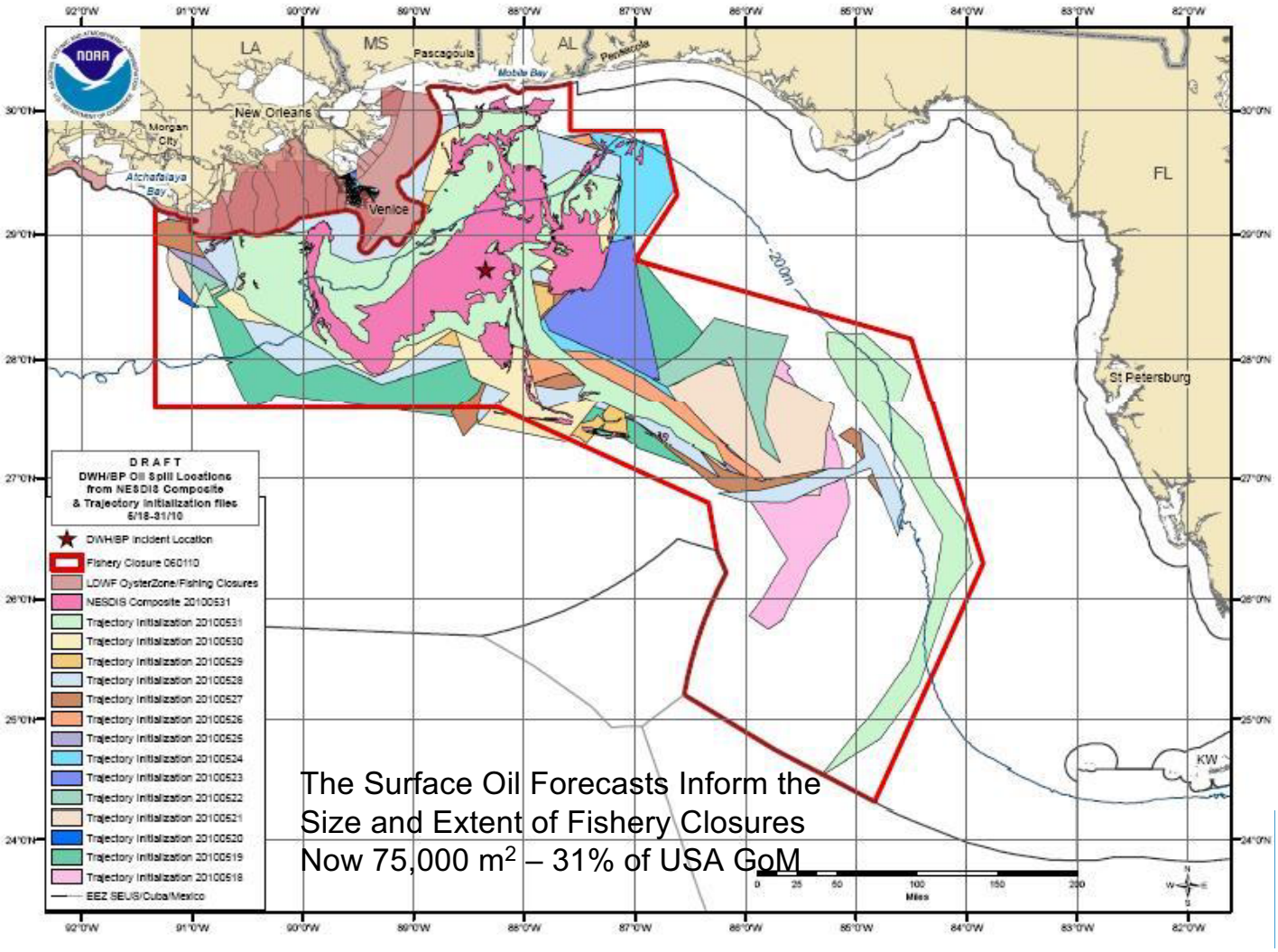
NOAA/NOS/OR&R **Offshore**

Estimate for: 1200 CDT, Friday, 6/04/10
Date Prepared: 1900 CDT, Tuesday, 6/01/10

Currents were obtained from three models: NOAA Gulf of Mexico, NavO/NCOM, and NRL/IASNFS. Each includes Loop Current dynamics. Gulf wide winds were obtained from the gridded NCEP product. The model was initialized from Sunday-Tuesday satellite imagery analysis (NOAA/NESDIS). The leading edge may contain tarballs that are not readily observable from the imagery (hence not included in the model initialization).



Satellite imagery analysis continues to show narrow bands of oil to the SE and ESE of the main slick. Recent overflights to this region reported only non-contiguous, colorless sheens continuing in narrow bands as seen in the satellite imagery. Trajectories for remaining observed oil within this region suggest these scattered sheens will continue to be entrained in a large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current. Imagery obtained on May 30 also showed a narrow band of apparent sheen within the clockwise Loop Current eddy (Franklin) as far south as approximately 27 degrees 15 minutes. If this sheen persists or has tarballs associated with it, there is potential for some of it to become entrained into the Loop Current and move toward the Florida Straits.



The Surface Oil Forecasts Inform the Size and Extent of Fishery Closures
Now 75,000 m^2 – 31% of USA GoM

Seafood Safety Monitoring
Putting the PAH Baselines into Context
EPA Action Limits

Qualifiers:
Assumption for a person eating 20 grams of seafood a day.
Some may say it should be 30 grams.
For subsistence, it would be much higher.

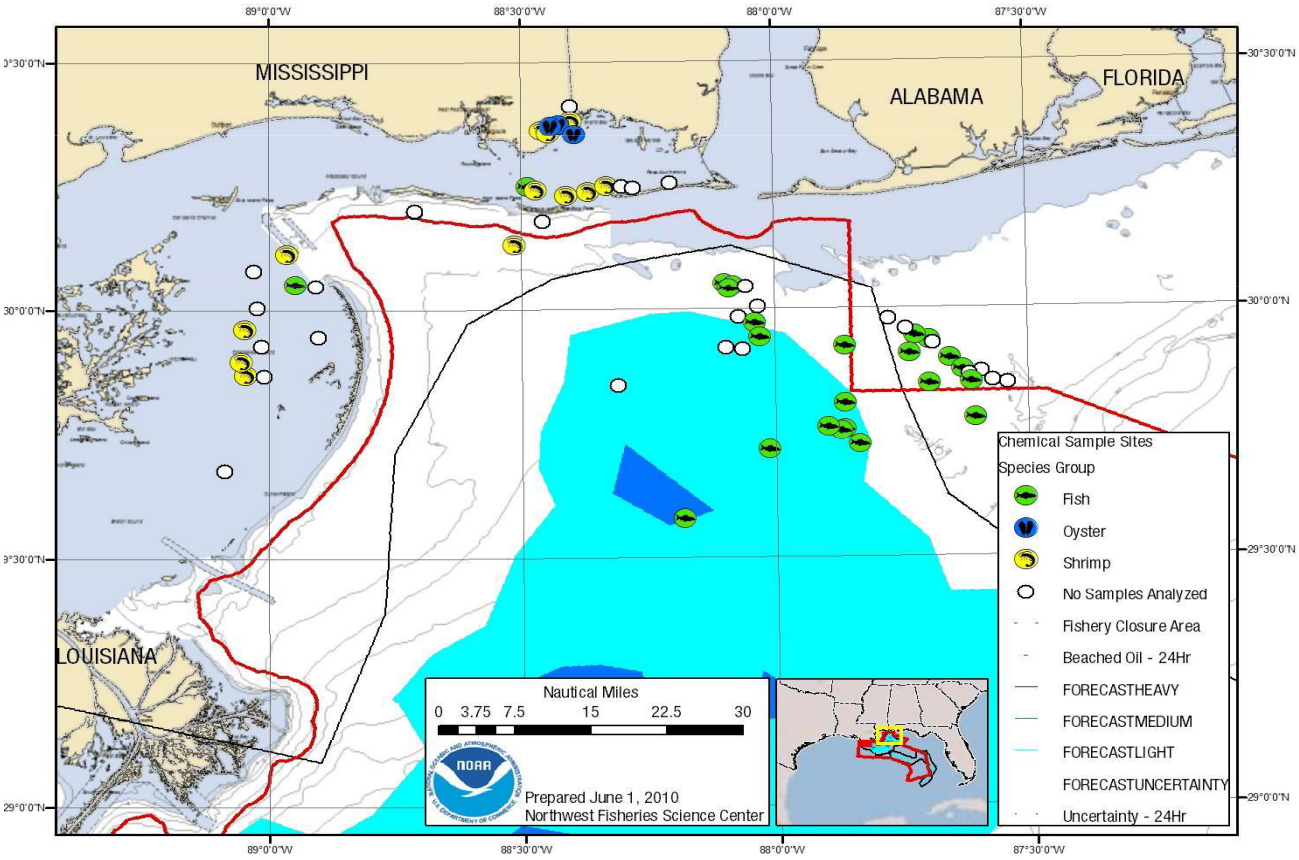
For 20 grams seafood consumption per day--which is about the average US per capita consumption:

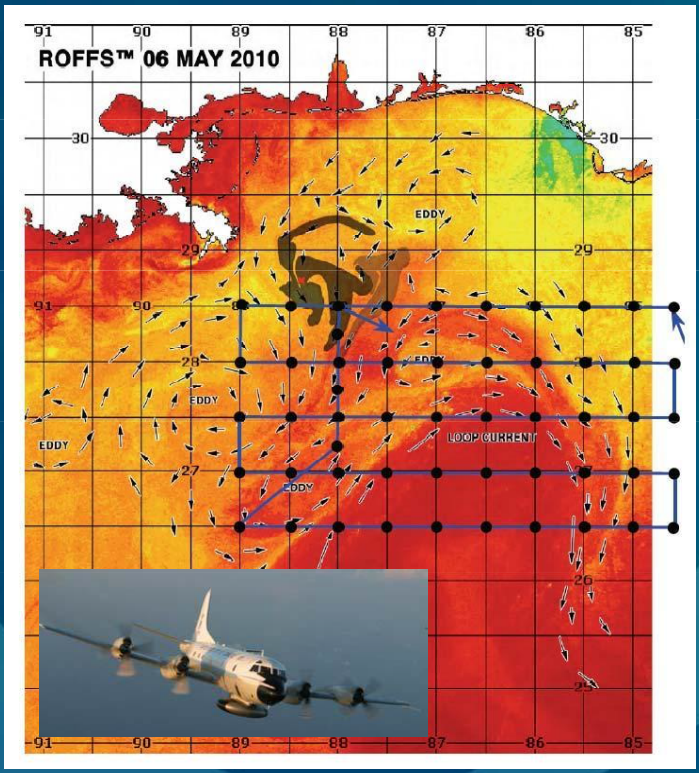
Fluranthene (FLA)	80 ng/g
Chrysene (CHR)	100 ng/g
Benzo[a]pyrene (BaP)	2 ng/g
Benz[a]anthracene(BAA)	100 ng/g
Pyrene (PYR)	10 ng/g

The values are ng of PAH per g of wet weight seafood.

Document ID: 0.7.19.1403.1

Seafood Safety Baselines collected for Snappers, groupers, shrimp and Oysters in LA, MS, AL, extending baselines to FL & TX
Baseline samples all well below the action levels (1/10 or below)



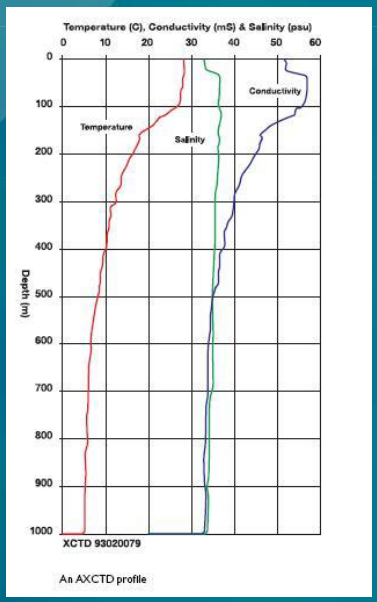


PROBE SPECIFICATIONS

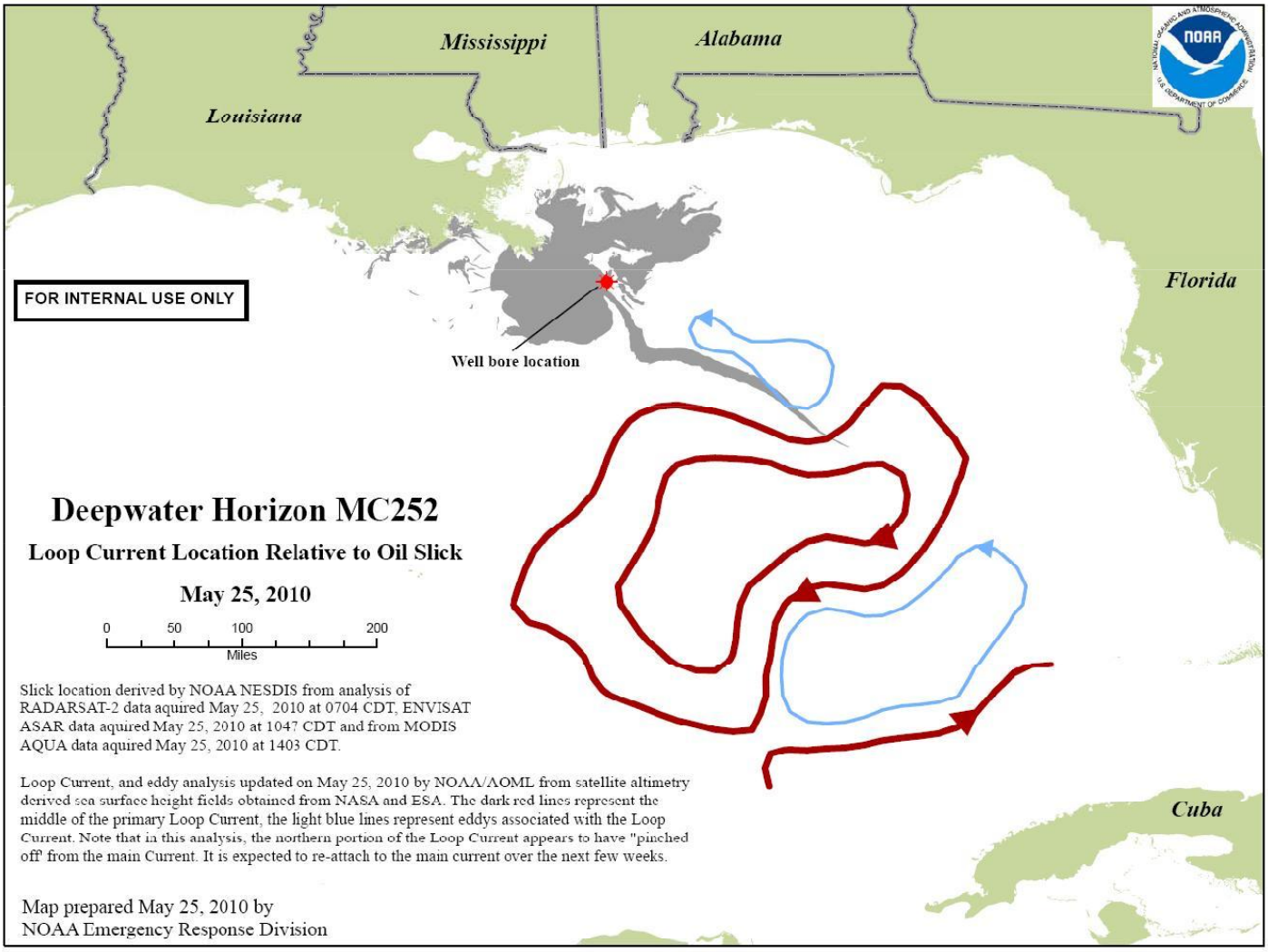
PROBE	PARAMETER	DEPTH	ACCURACY	ACQUISITION SYSTEM
AXCTD	conductivity, temperature	1000 m	-0.035 mS/cm, -0.035°C	MK 2
AXSV	sound velocity	850 m	-0.025 m/sec	MK 2
AXCP	current velocity, temperature	1500 m	-1.0 cm/sec RMS, -0.2 °C	MK 0

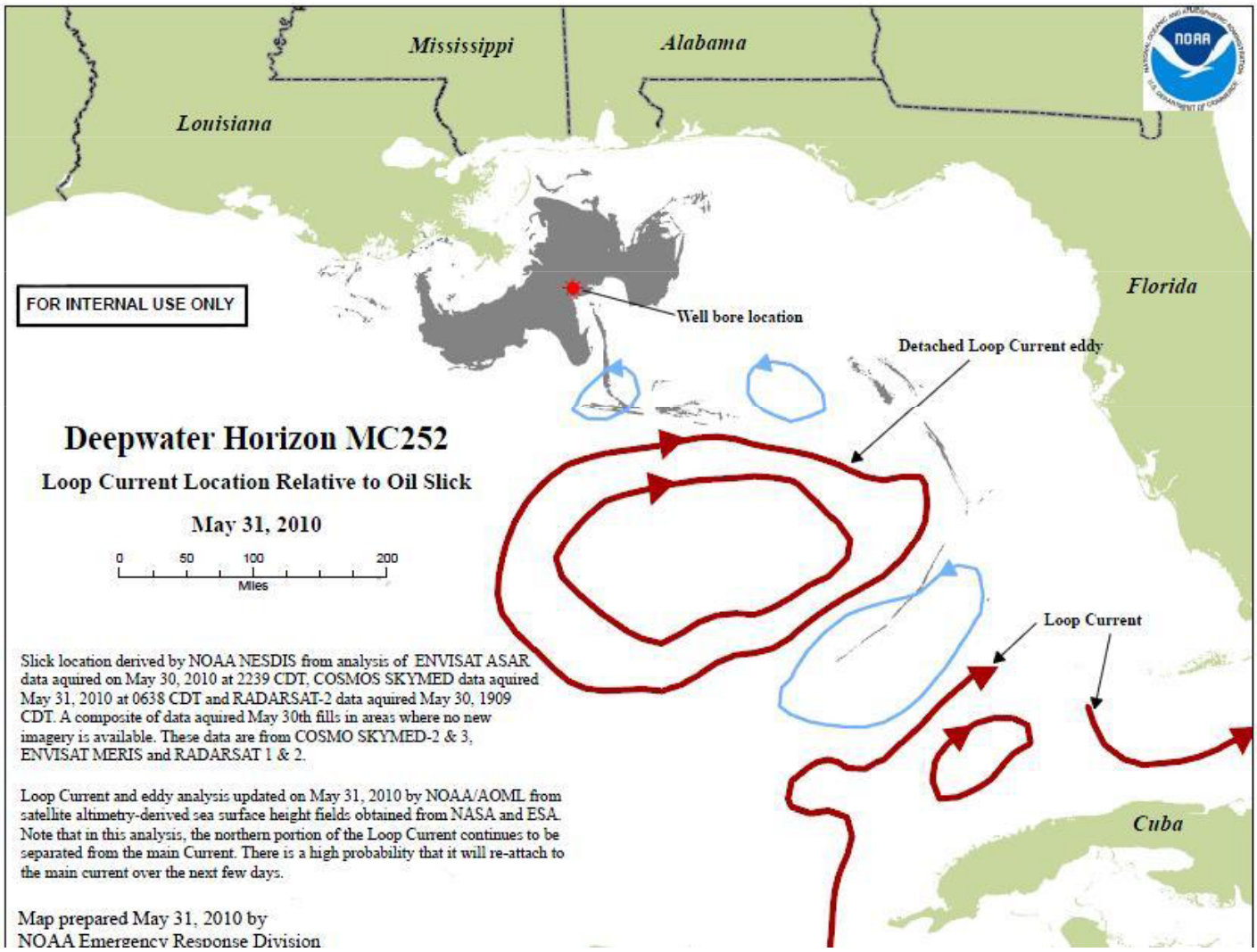
- NOAA WP-3D aircraft deployed airborne expendable current and conductivity with depth probes (AXCP and AXCTD, respectively) to provide deep-water (~1000m) profiles of currents and salinity in the vicinity of the oil spill and the Loop Current. Focus on area between oil & LC on 4 occasions



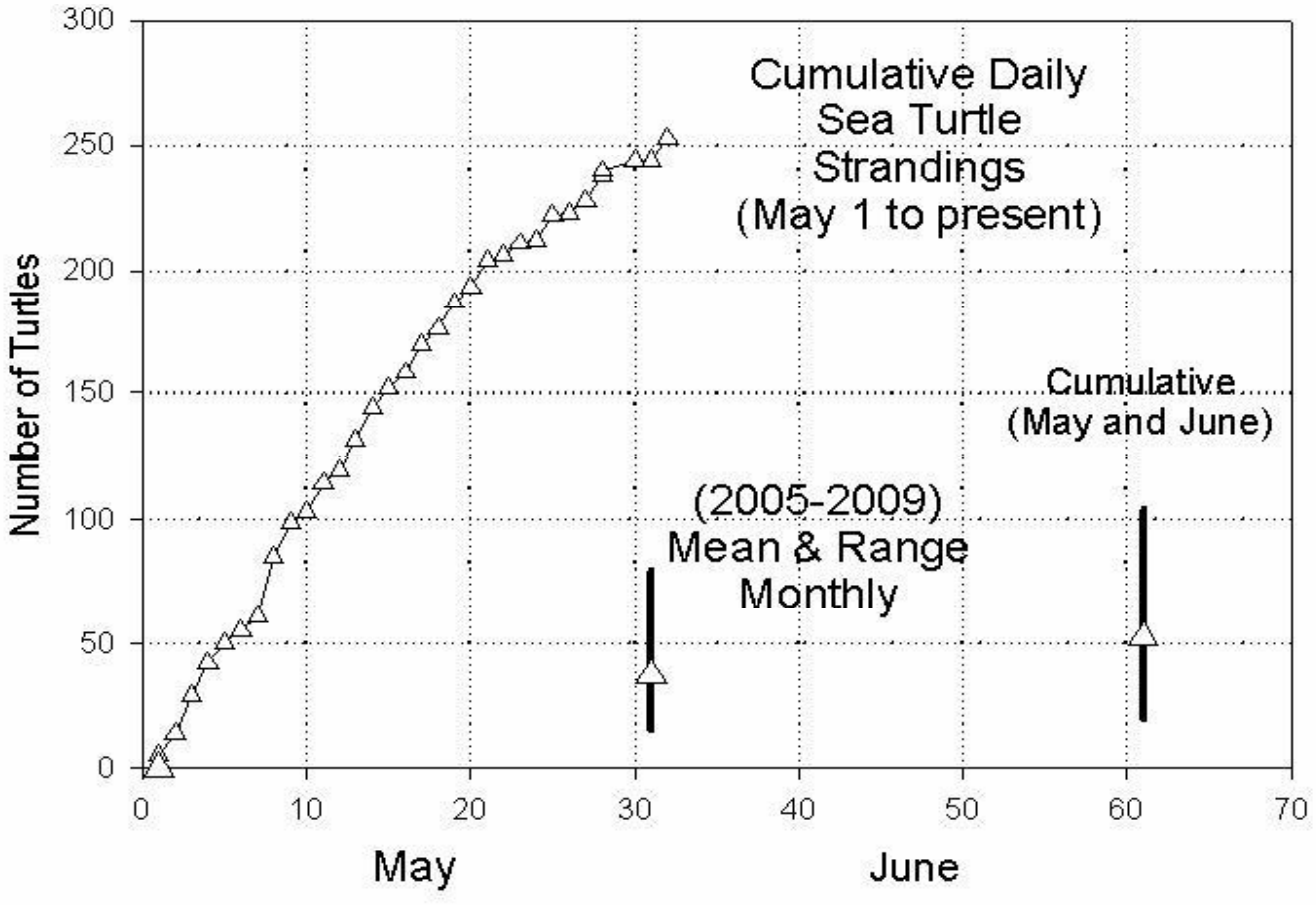


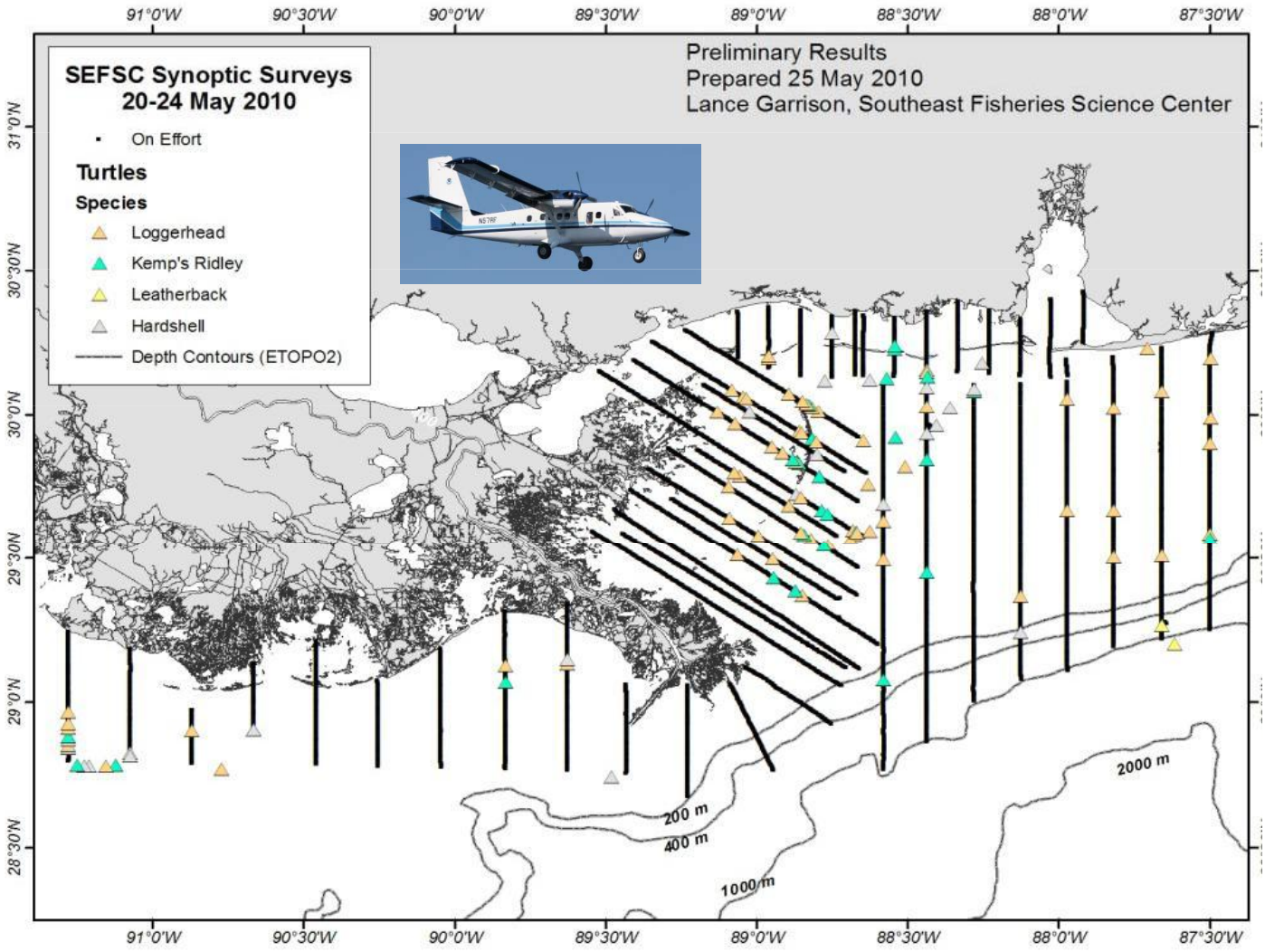
An AXCTD profile


Mississippi
Alabama
Louisiana
Florida
Cuba
FOR INTERNAL USE ONLY
Well bore location
Deepwater Horizon MC252
Loop Current Location Relative to Oil Slick
May 25, 2010
0
50
100
200
Miles
Slick location derived by NOAA NESDIS from analysis of RADARSAT-2 data aquired May 25, 2010 at 0704 CDT, ENVISAT ASAR data aquired May 25, 2010 at 1047 CDT and from MODIS AQUA data aquired May 25, 2010 at 1403 CDT.
Loop Current, and eddy analysis updated on May 25, 2010 by NOAA/AOML from satellite altimetry derived sea surface height fields obtained from NASA and ESA. The dark red lines represent the middle of the primary Loop Current, the light blue lines represent eddys associated with the Loop Current. Note that in this analysis, the northern portion of the Loop Current appears to have "pinched off' from the main Current. It is expected to re-attach to the main current over the next few weeks.
Map prepared May 25, 2010 by
NOAA Emergency Response Division

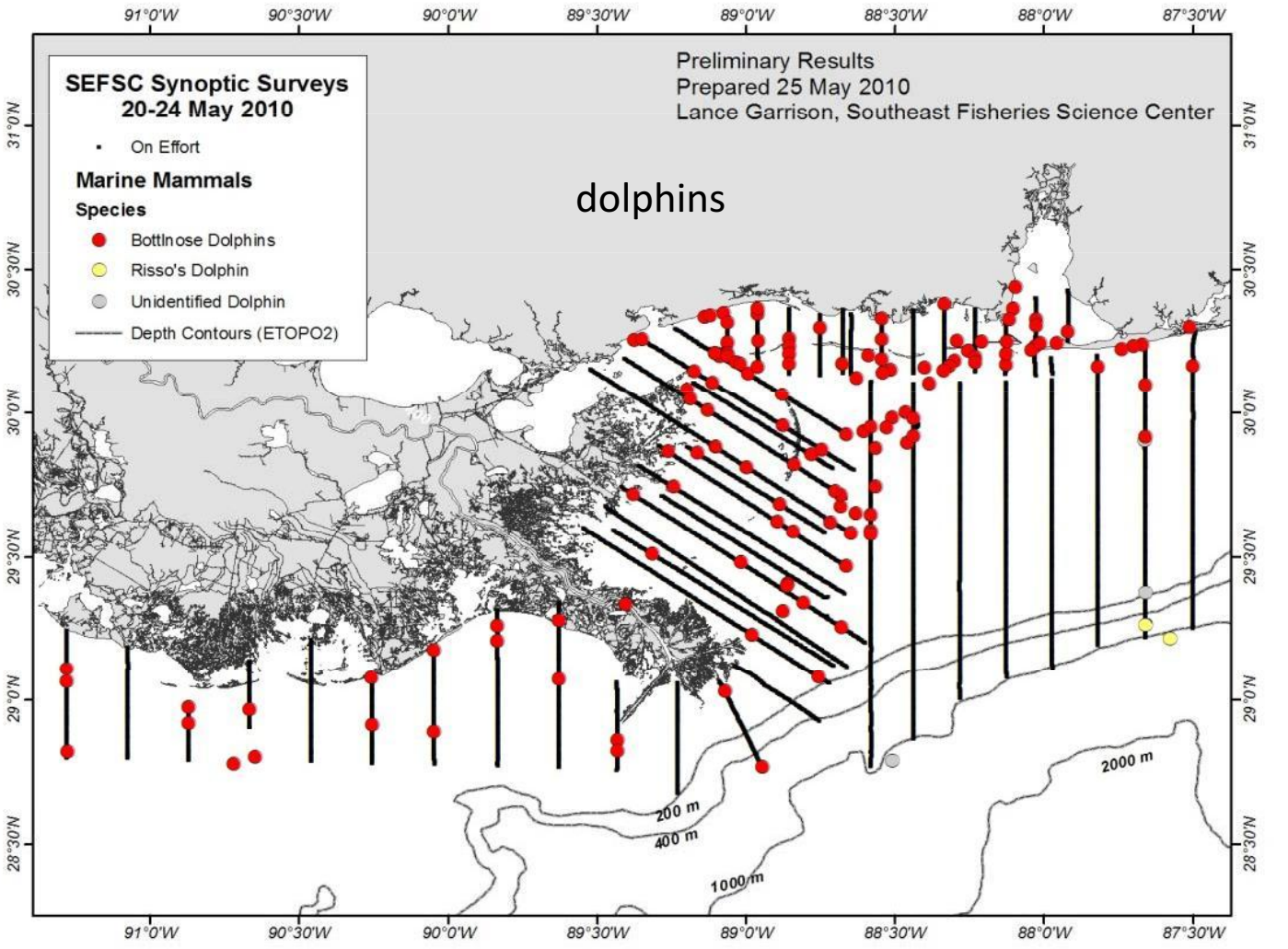

Mississippi
Alabama
Louisiana
Florida
Cuba
FOR INTERNAL USE ONLY
Well bore location
Detached Loop Current eddy
Loop Current
Deepwater Horizon MC252
Loop Current Location Relative to Oil Slick
May 31, 2010
0 50 100 200
Miles
Slick location derived by NOAA NESDIS from analysis of ENVISAT ASAR data aquired on May 30, 2010 at 2239 CDT, COSMOS SKYMED data aquired May 31, 2010 at 0638 CDT and RADARSAT-2 data aquired May 30, 1909 CDT. A composite of data aquired May 30th fills in areas where no new imagery is available. These data are from COSMO SKYMED-2 & 3, ENVISAT MERIS and RADARSAT 1 & 2.
Loop Current and eddy analysis updated on May 31, 2010 by NOAA/AOML from satellite altimetry-derived sea surface height fields obtained from NASA and ESA. Note that in this analysis, the northern portion of the Loop Current continues to be separated from the main Current. There is a high probability that it will re-attach to the main current over the next few days.
Map prepared May 31, 2010 by
NOAA Emergency Response Division

Protected Resources a Major Concern





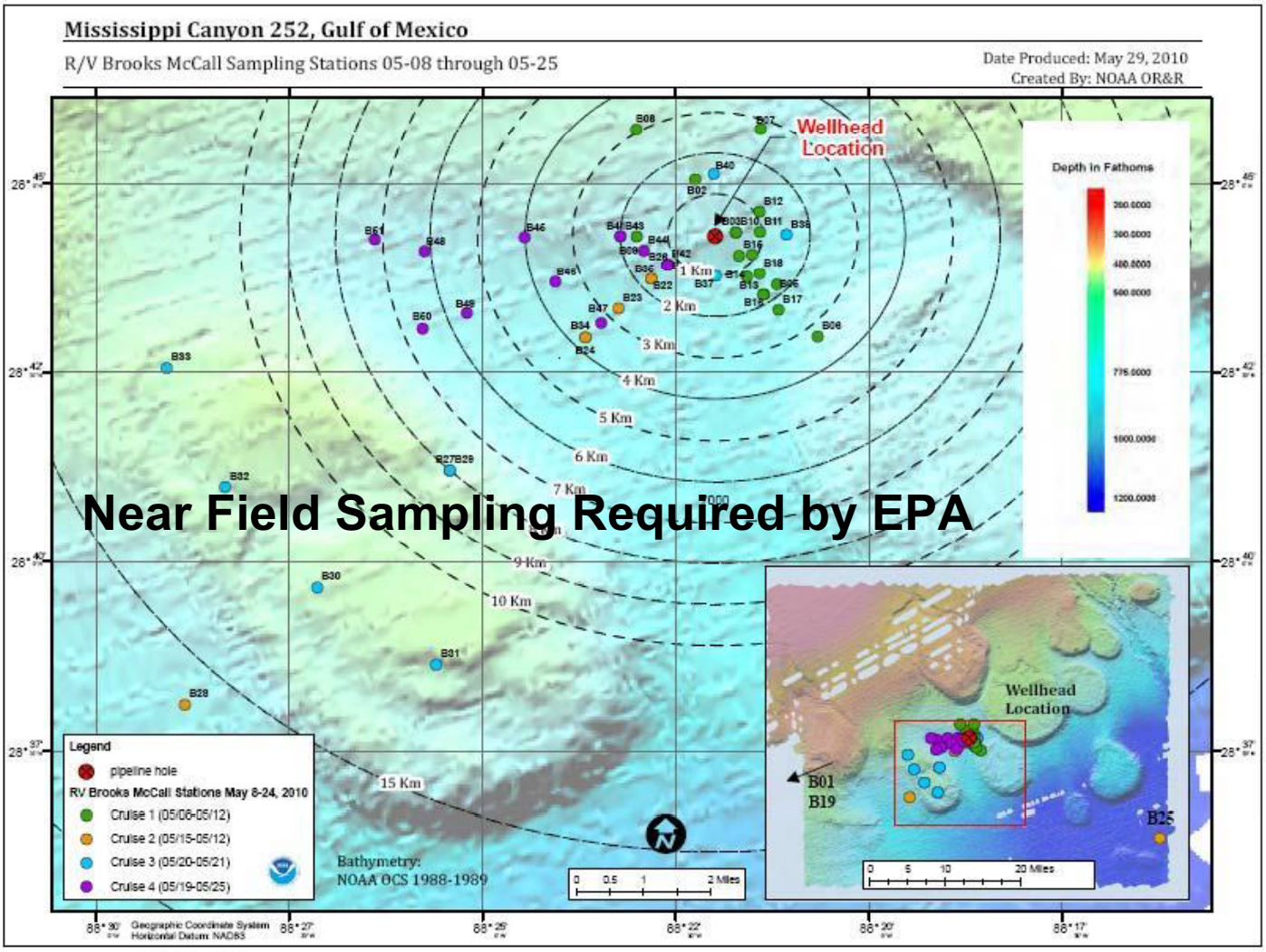
Document ID: 0.7.19.1403.1

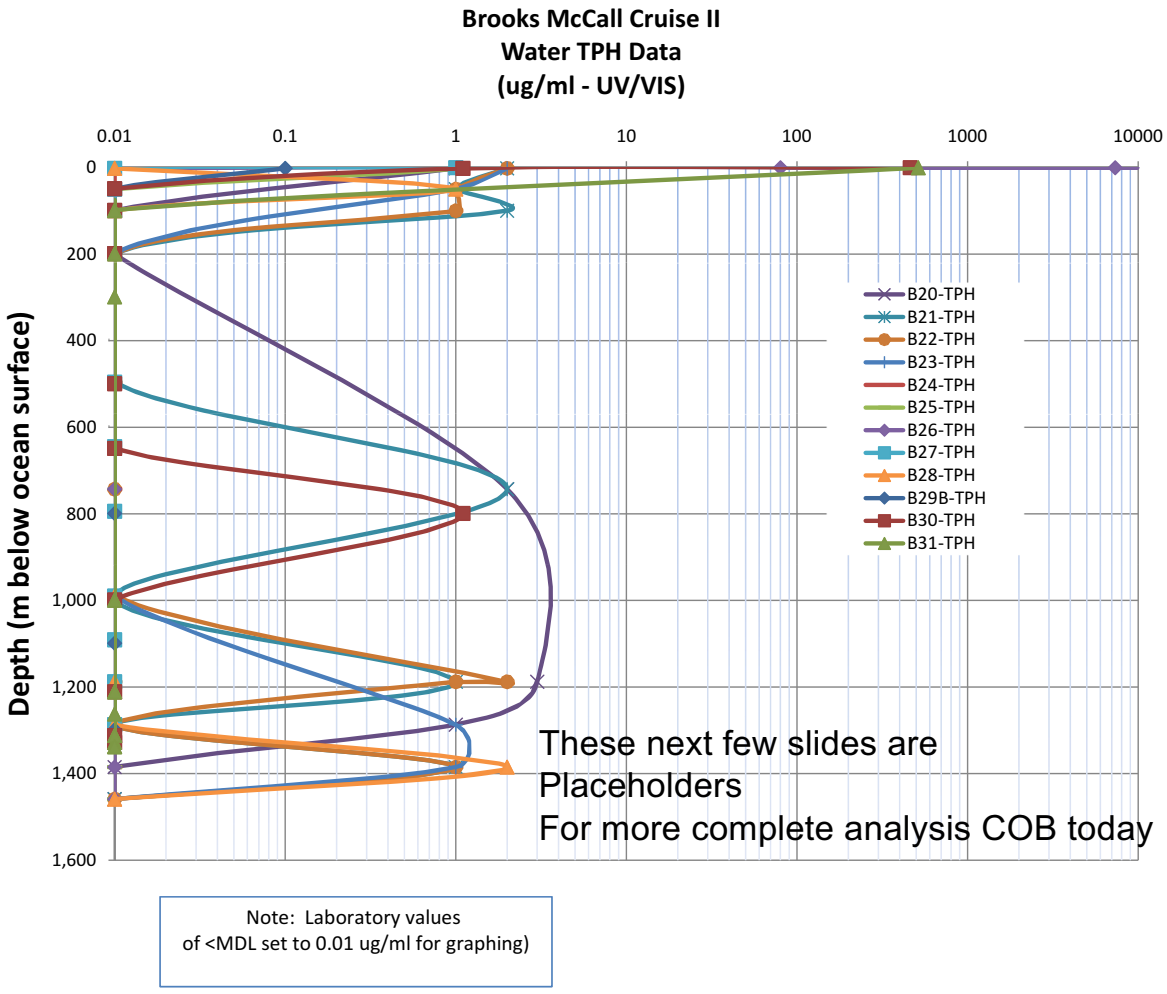

SEFSC Synoptic Surveys
20-24 May 2010
On Effort
Marine Mammals
Species
Bottlnose Dolphins
Risso's Dolphin
Unidentified Dolphin
Depth Contours (ETOPO2)
Preliminary Results
Prepared 25 May 2010
Lance Garrison, Southeast Fisheries Science Center
dolphins
91°0'W
90°30'W
90°0'W
89°30'W
89°0'W
88°30'W
88°0'W
87°30'W
31°0'N
30°30'N
30°0'N
29°30'N
29°0'N
28°30'N
200 m
400 m
1000 m
2000 m

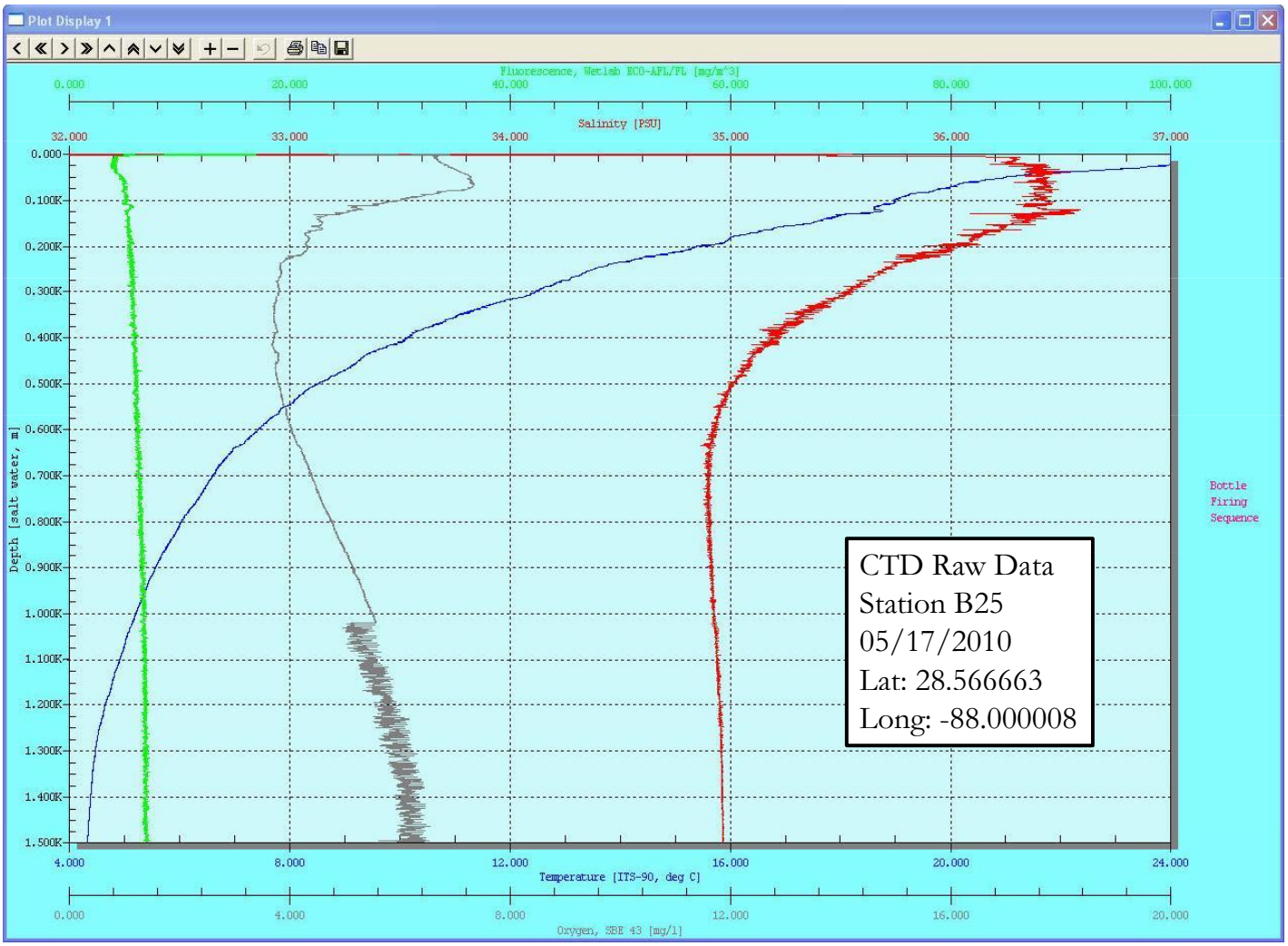
Sub-Surface Sampling for Oil and Dispersants

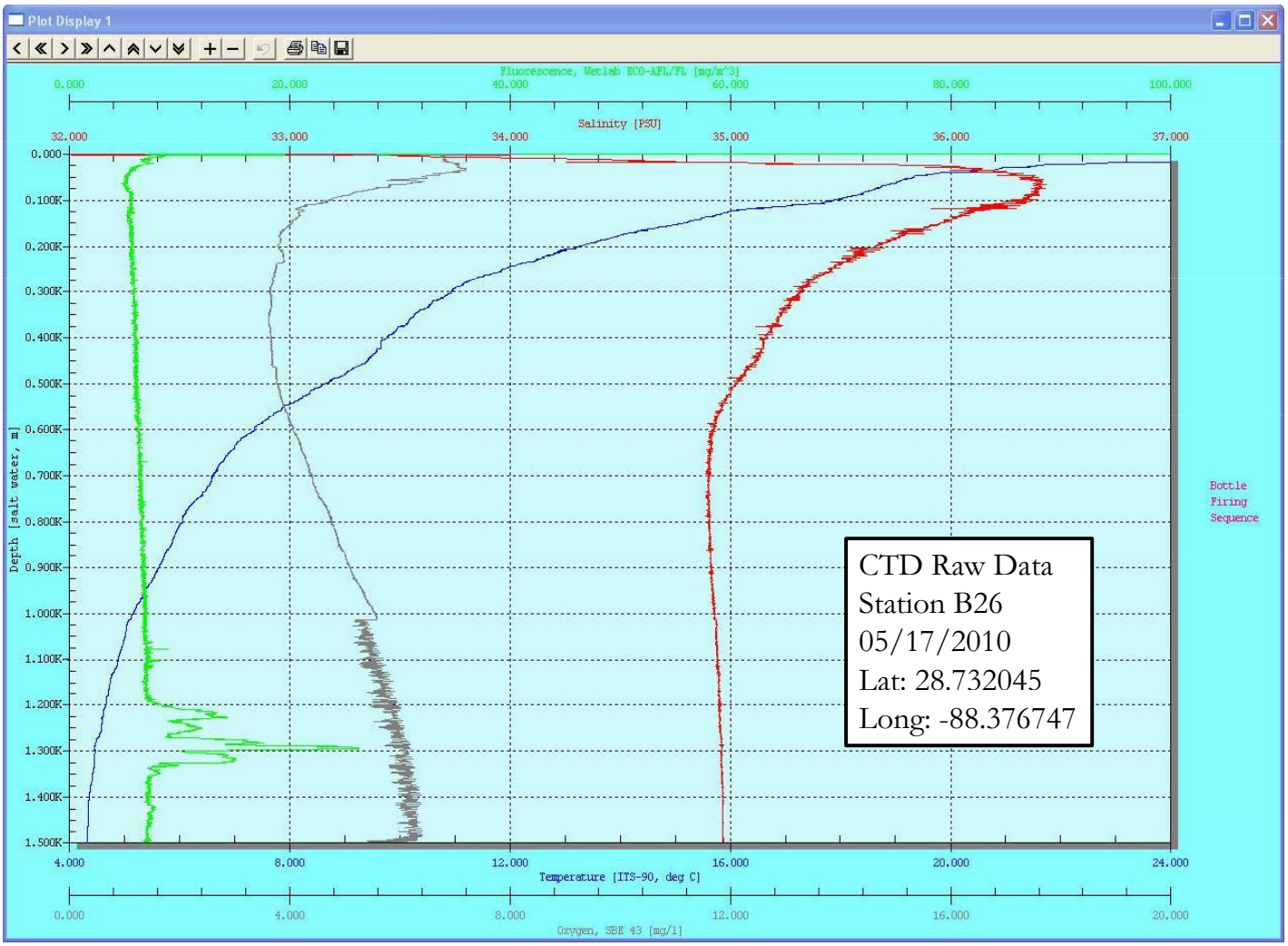
- Required Near-Field sampling for sub-surface dispersant application
- NOAA Research Vessels and NOAA Sponsored Cruises
- Other sampling Efforts Sponsored by Others

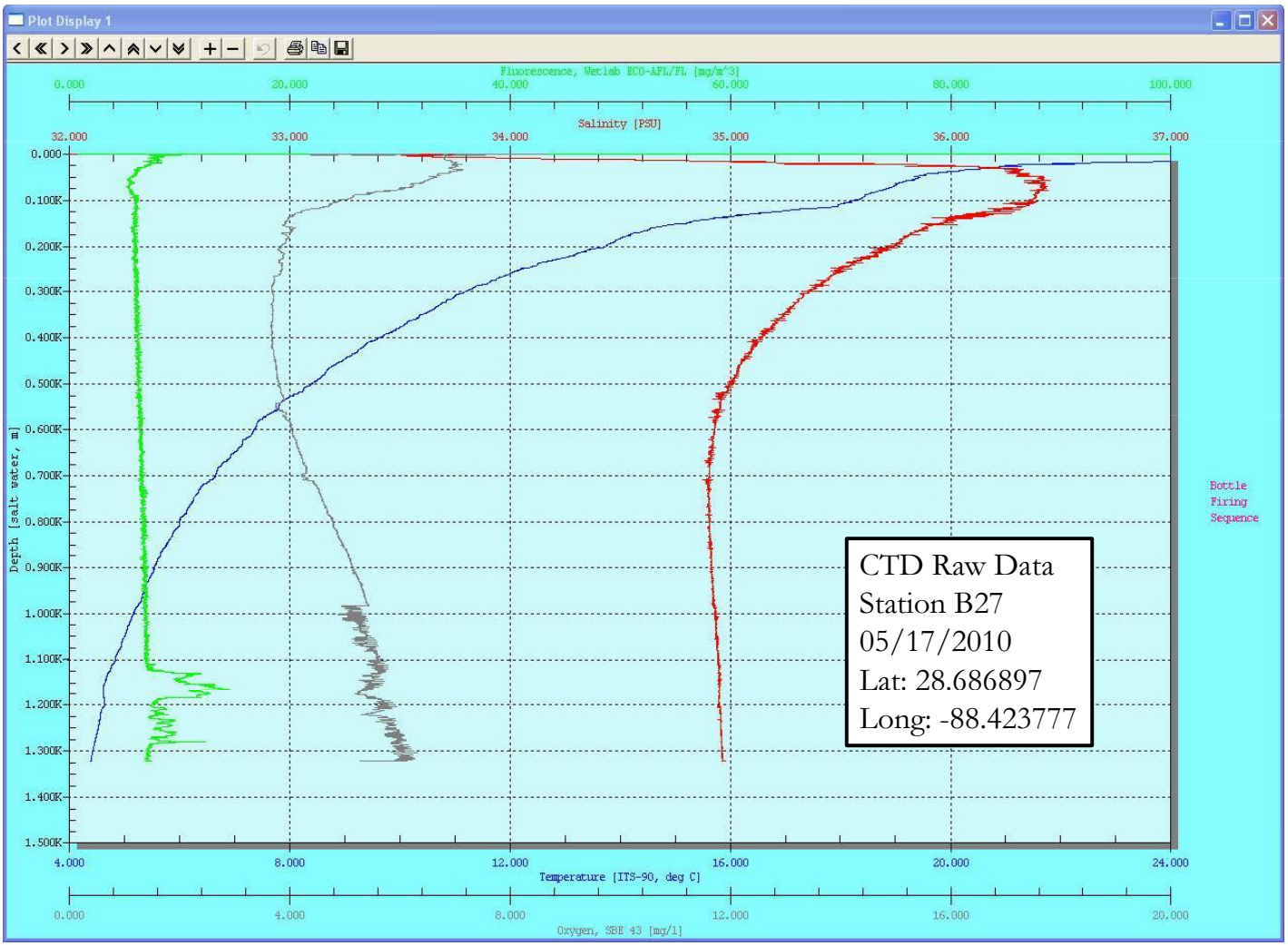
At lease 7 research vessels involved in collecting data using a variety of technologies including ship-board acoustics, flurometry, water sampling using CTD, water sampling with AUV, neuston, Mocness, and trawling, sediment samples

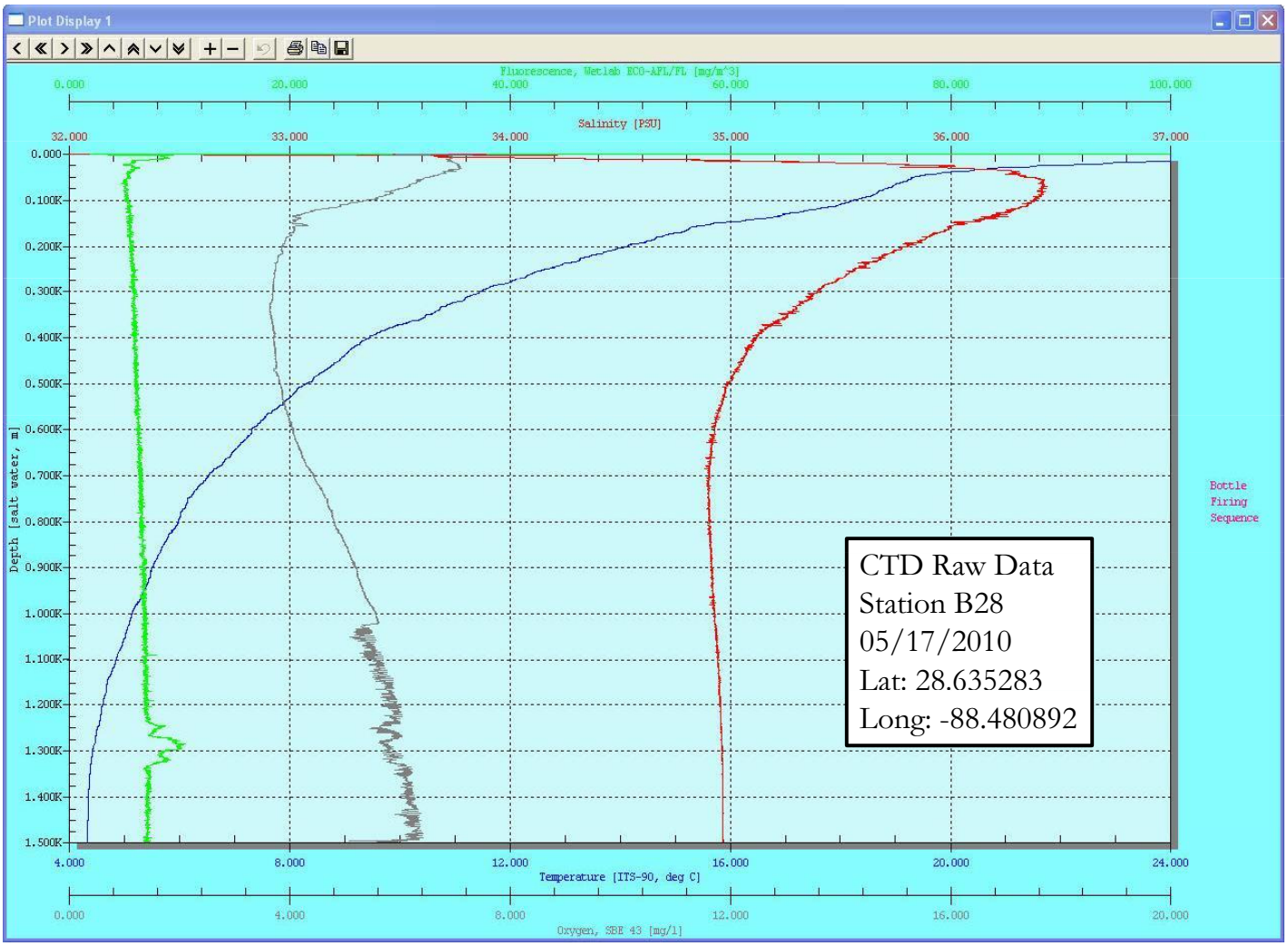

Mississippi Canyon 252, Gulf of Mexico
R/V Brooks McCall Sampling Stations 05-08 through 05-25
Date Produced: May 29, 2010
Created By: NOAA OR&R
Wellhead Location
Depth in Fathoms
1 Km
2 Km
3 Km
4 Km
5 Km
6 Km
7 Km
9 Km
10 Km
15 Km
Near Field Sampling Required by EPA
Legend
pipeline hole
RV Brooks McCall Stations May 8-24, 2010
Cruise 1 (05/06-05/12)
Cruise 2 (05/15-05/12)
Cruise 3 (05/20-05/21)
Cruise 4 (05/19-05/25)
Bathymetry:
NOAA OCS 1988-1989
Wellhead Location
B01
B19
B25
Geographic Coordinate System
Horizontal Datum: NAD83

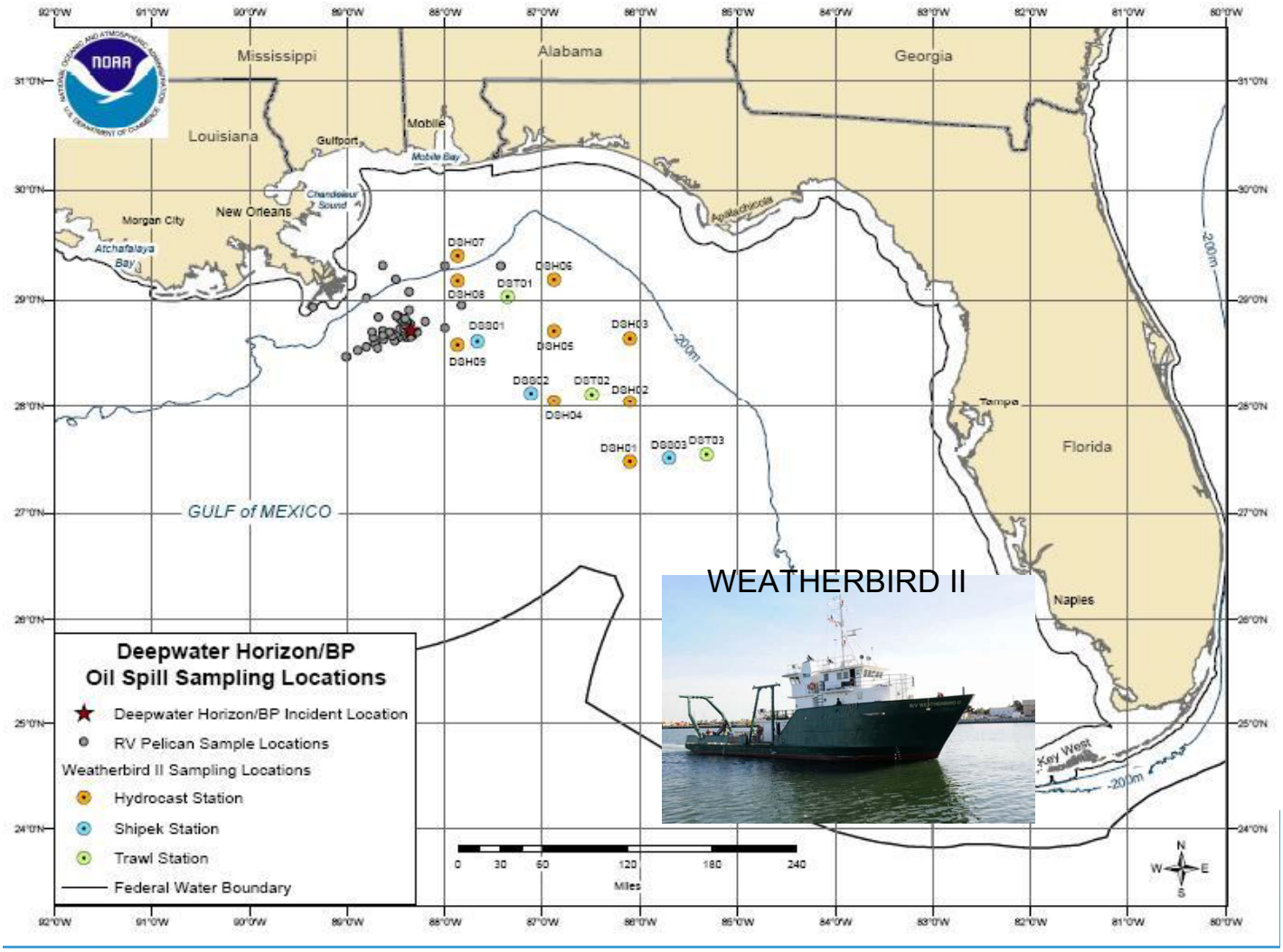

Brooks McCall Cruise II
Water TPH Data
(ug/ml - UV/VIS)
0.01
0.1
1
10
100
1000
10000
0
200
400
600
800
1,000
1,200
1,400
1,600
Depth (m below ocean surface)
B20-TPH
B21-TPH
B22-TPH
B23-TPH
B24-TPH
B25-TPH
B26-TPH
B27-TPH
B28-TPH
B29B-TPH
B30-TPH
B31-TPH
These next few slides are
Placeholders
For more complete analysis COB today
Note: Laboratory values
of <MDL set to 0.01 ug/ml for graphing)


Plot Display 1
Fluorescence, Wetlab ECO-AFL/FL [mg/m^3]
0.000
20.000
40.000
60.000
80.000
100.000
Salinity [PSU]
32.000
33.000
34.000
35.000
36.000
37.000
Depth [salt water, m]
0.000
0.100K
0.200K
0.300K
0.400K
0.500K
0.600K
0.700K
0.800K
0.900K
1.000K
1.100K
1.200K
1.300K
1.400K
1.500K
Bottle
Firing
Sequence
CTD Raw Data
Station B25
05/17/2010
Lat: 28.566663
Long: -88.000008
4.000
8.000
12.000
16.000
20.000
24.000
Temperature [ITS-90, deg C]
0.000
4.000
8.000
12.000
16.000
20.000
Oxygen, SBE 43 [mg/l]

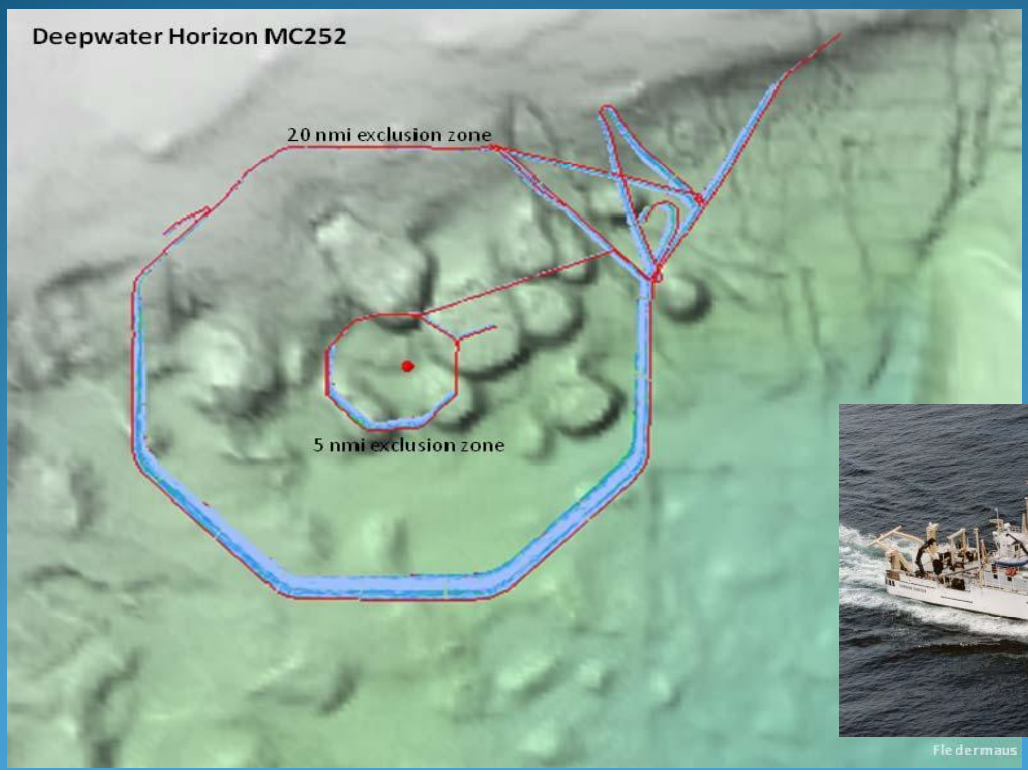

Plot Display 1
Fluorescence, Wetlab ECO-AFL/FL [mg/m^3]
0.000
20.000
40.000
60.000
80.000
100.000
Salinity [PSU]
32.000
33.000
34.000
35.000
36.000
37.000
Depth [salt water, m]
0.000
0.100K
0.200K
0.300K
0.400K
0.500K
0.600K
0.700K
0.800K
0.900K
1.000K
1.100K
1.200K
1.300K
1.400K
1.500K
Bottle
Firing
Sequence
CTD Raw Data
Station B26
05/17/2010
Lat: 28.732045
Long: -88.376747
4.000
8.000
12.000
16.000
20.000
24.000
Temperature [ITS-90, deg C]
0.000
4.000
8.000
12.000
16.000
20.000
Oxygen, SBE 43 [mg/l]


Plot Display 1
Fluorescence, Wetlab ECO-AFL/FL [mg/m^3]
0.000
20.000
40.000
60.000
80.000
100.000
Salinity [PSU]
32.000
33.000
34.000
35.000
36.000
37.000
Depth [salt water, m]
0.000
0.100K
0.200K
0.300K
0.400K
0.500K
0.600K
0.700K
0.800K
0.900K
1.000K
1.100K
1.200K
1.300K
1.400K
1.500K
Bottle
Firing
Sequence
CTD Raw Data
Station B27
05/17/2010
Lat: 28.686897
Long: -88.423777
4.000
8.000
12.000
16.000
20.000
24.000
Temperature [ITS-90, deg C]
0.000
4.000
8.000
12.000
16.000
20.000
Oxygen, SBE 43 [mg/l]


Plot Display 1
Fluorescence, Wetlab ECO-AFL/FL [mg/m^3]
0.000
20.000
40.000
60.000
80.000
100.000
Salinity [PSU]
32.000
33.000
34.000
35.000
36.000
37.000
Depth [salt water, m]
0.000
0.100K
0.200K
0.300K
0.400K
0.500K
0.600K
0.700K
0.800K
0.900K
1.000K
1.100K
1.200K
1.300K
1.400K
1.500K
Bottle
Firing
Sequence
CTD Raw Data
Station B28
05/17/2010
Lat: 28.635283
Long: -88.480892
4.000
8.000
12.000
16.000
20.000
24.000
Temperature [ITS-90, deg C]
0.000
4.000
8.000
12.000
16.000
20.000
Oxygen, SBE 43 [mg/l]

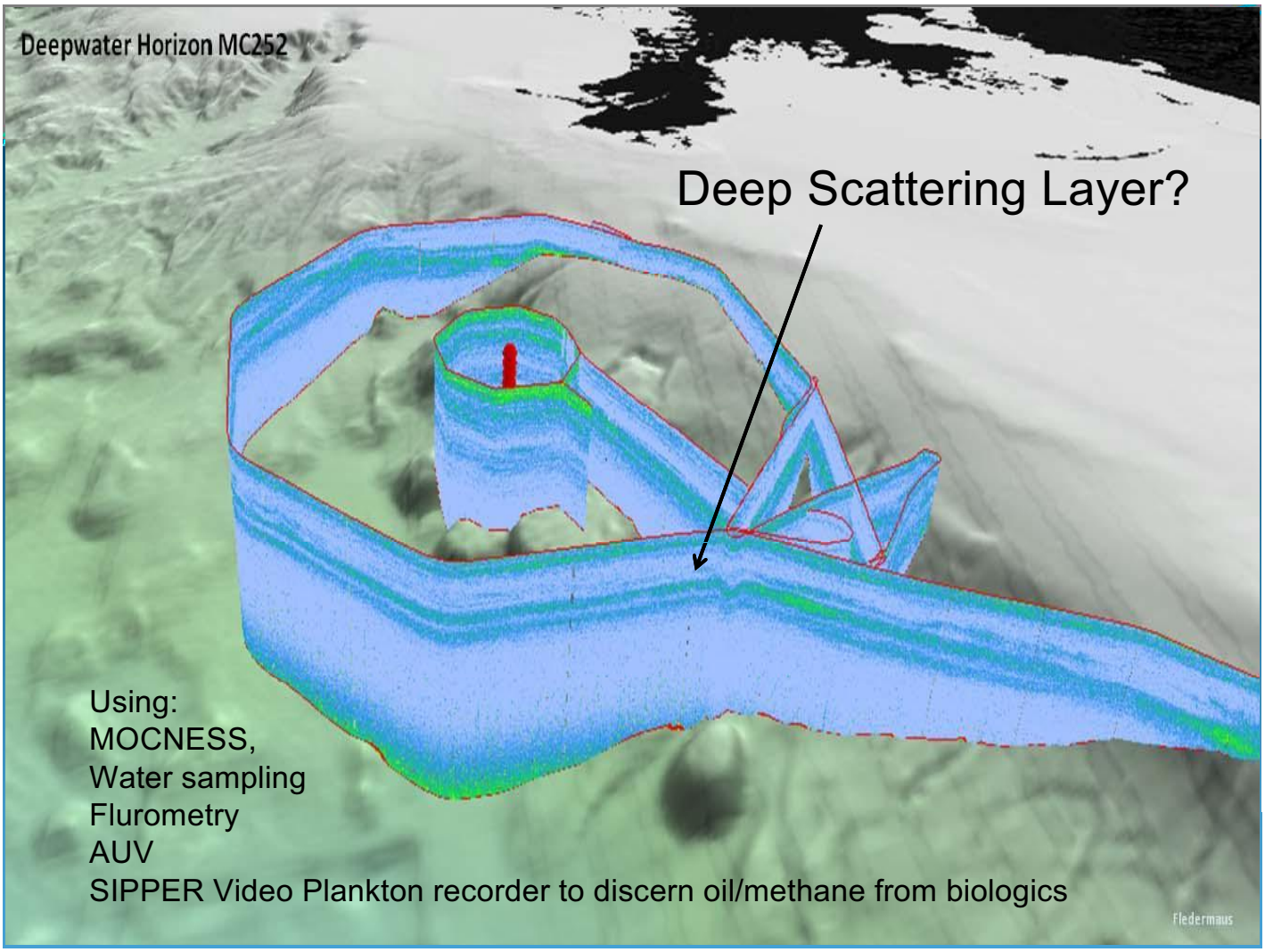

Mississippi
Alabama
Georgia
Louisiana
Gulfport
Mobile
Mobile Bay
Chandeleur Sound
New Orleans
Morgan City
Atchafalaya Bay
Apalachicola
Tampa
Florida
Naples
Key West
GULF of MEXICO
200m
DSH07
DSH06
DSH08
DST01
DSH05
DSB01
DSH03
DSH09
DSB02
DST02
DSH02
DSH04
DSH01
DSB03
DST03
WEATHERBIRD II
Deepwater Horizon/BP
Oil Spill Sampling Locations
Deepwater Horizon/BP Incident Location
RV Pelican Sample Locations
Weatherbird II Sampling Locations
Hydrocast Station
Shipek Station
Trawl Station
Federal Water Boundary
0 30 60 120 180 240
Miles
N
W
E
S

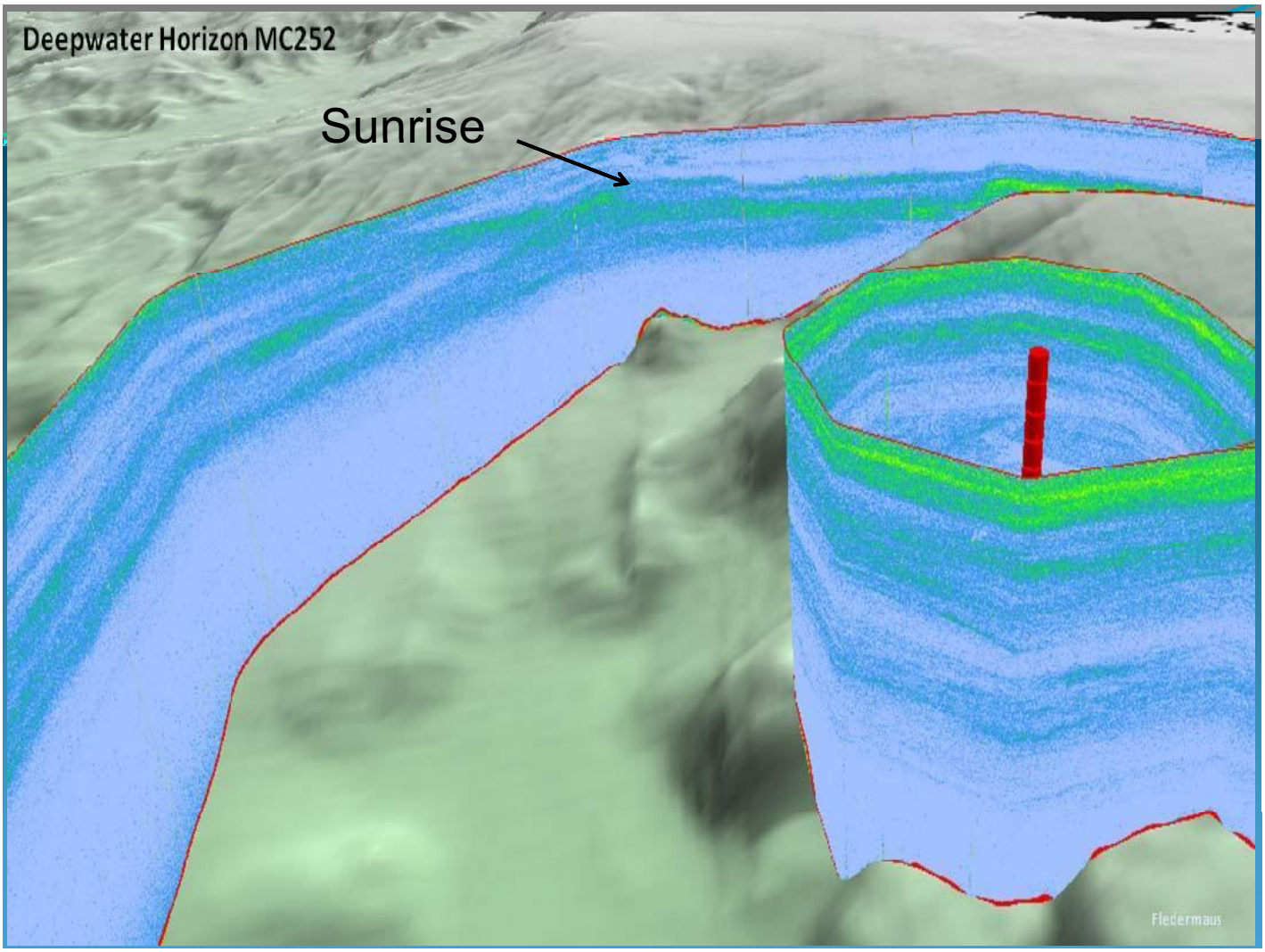
Acoustics Cruise aboard GORDON GUNTER
20 nm ring then 5 nm ring

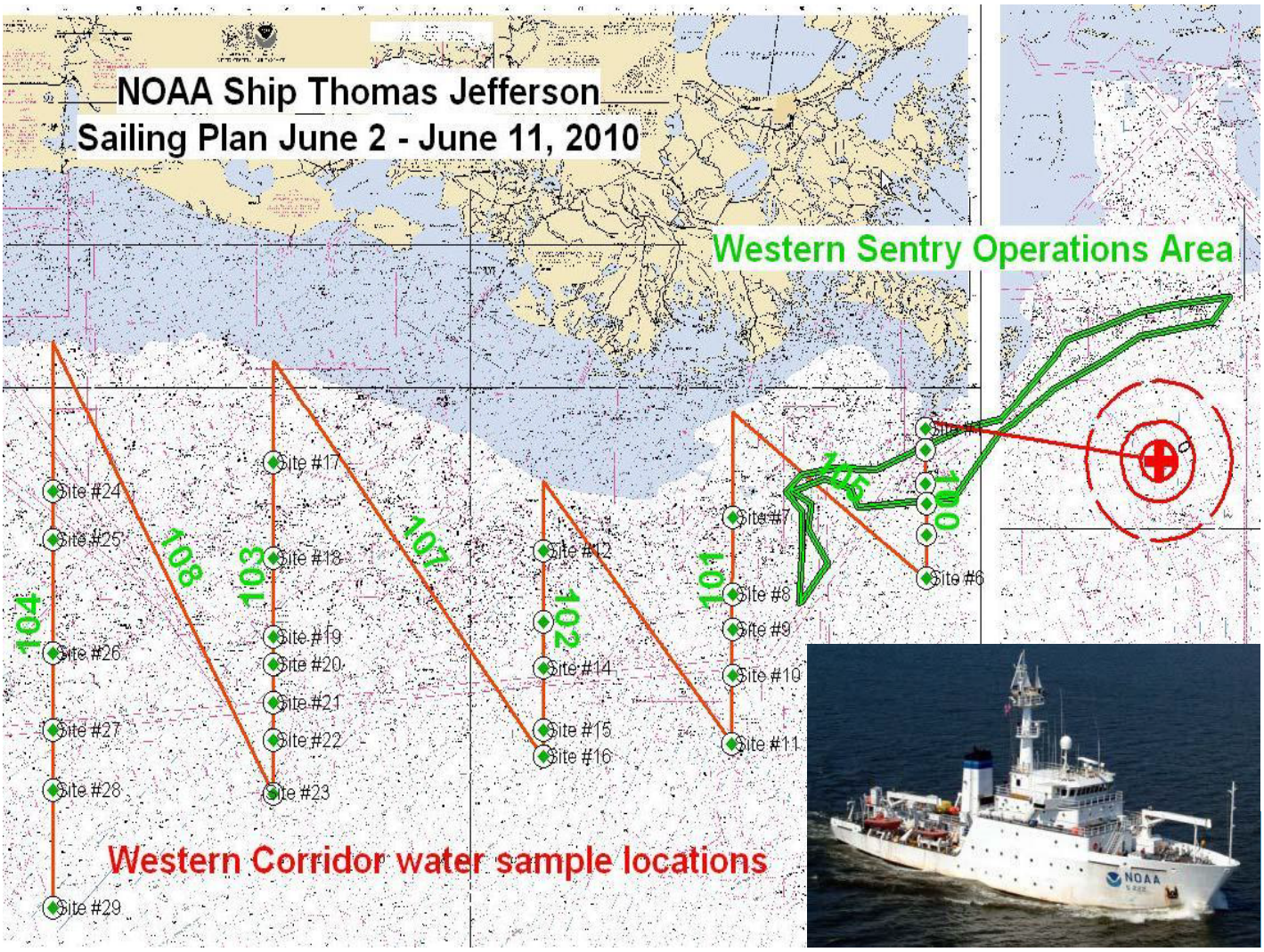




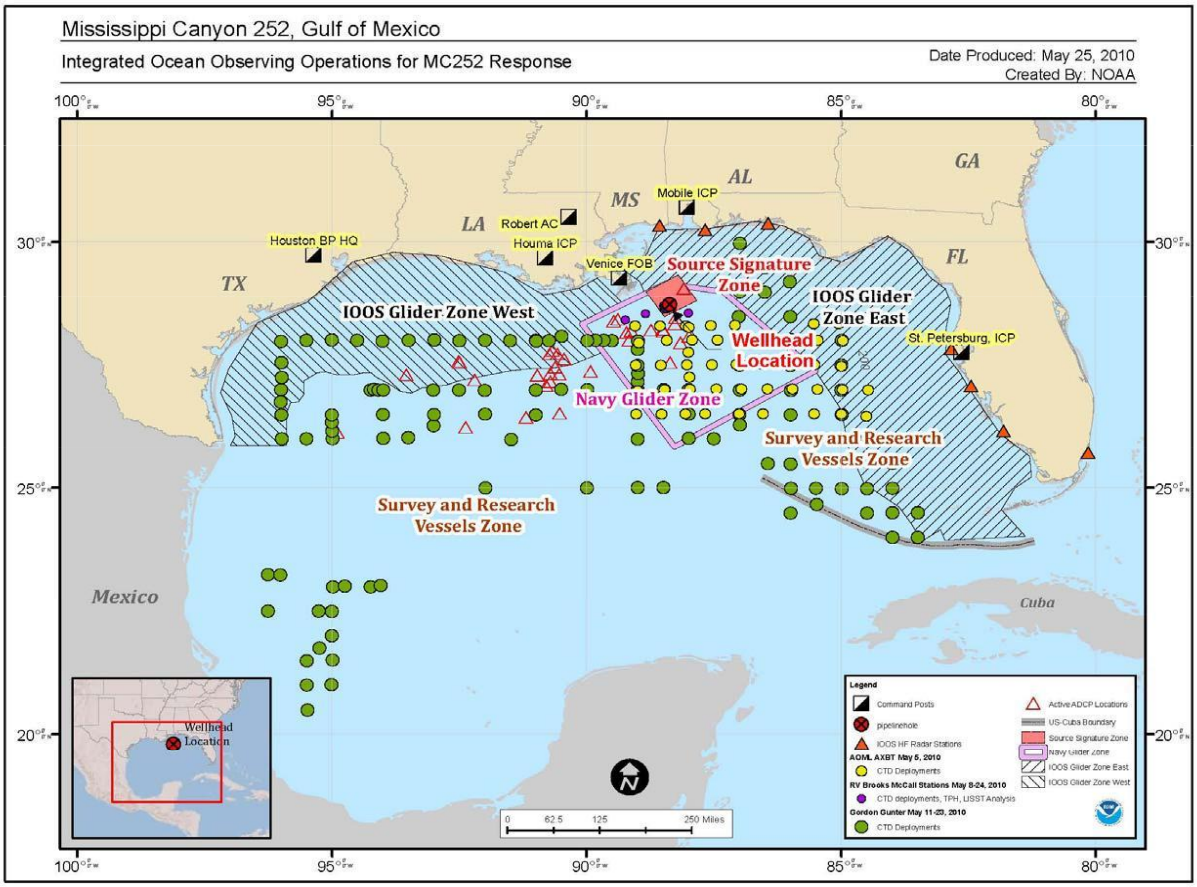
Fledermaus


Deepwater Horizon MC252
Deep Scattering Layer?
Using:
MOCNESS,
Water sampling
Flurometry
AUV
SIPPER Video Plankton recorder to discern oil/methane from biologics
Fledermaus


Deepwater Horizon MC252
Sunrise
Fledermaus


NOAA Ship Thomas Jefferson
Sailing Plan June 2 - June 11, 2010
Western Sentry Operations Area
Western Corridor water sample locations
Site #1
Site #2
Site #3
Site #4
Site #5
Site #6
Site #7
Site #8
Site #9
Site #10
Site #11
Site #12
Site #13
Site #14
Site #15
Site #16
Site #17
Site #18
Site #19
Site #20
Site #21
Site #22
Site #23
Site #24
Site #25
Site #26
Site #27
Site #28
Site #29
101
102
103
104
105
106
107
108
NOAA

Greater Awareness of sampling assets



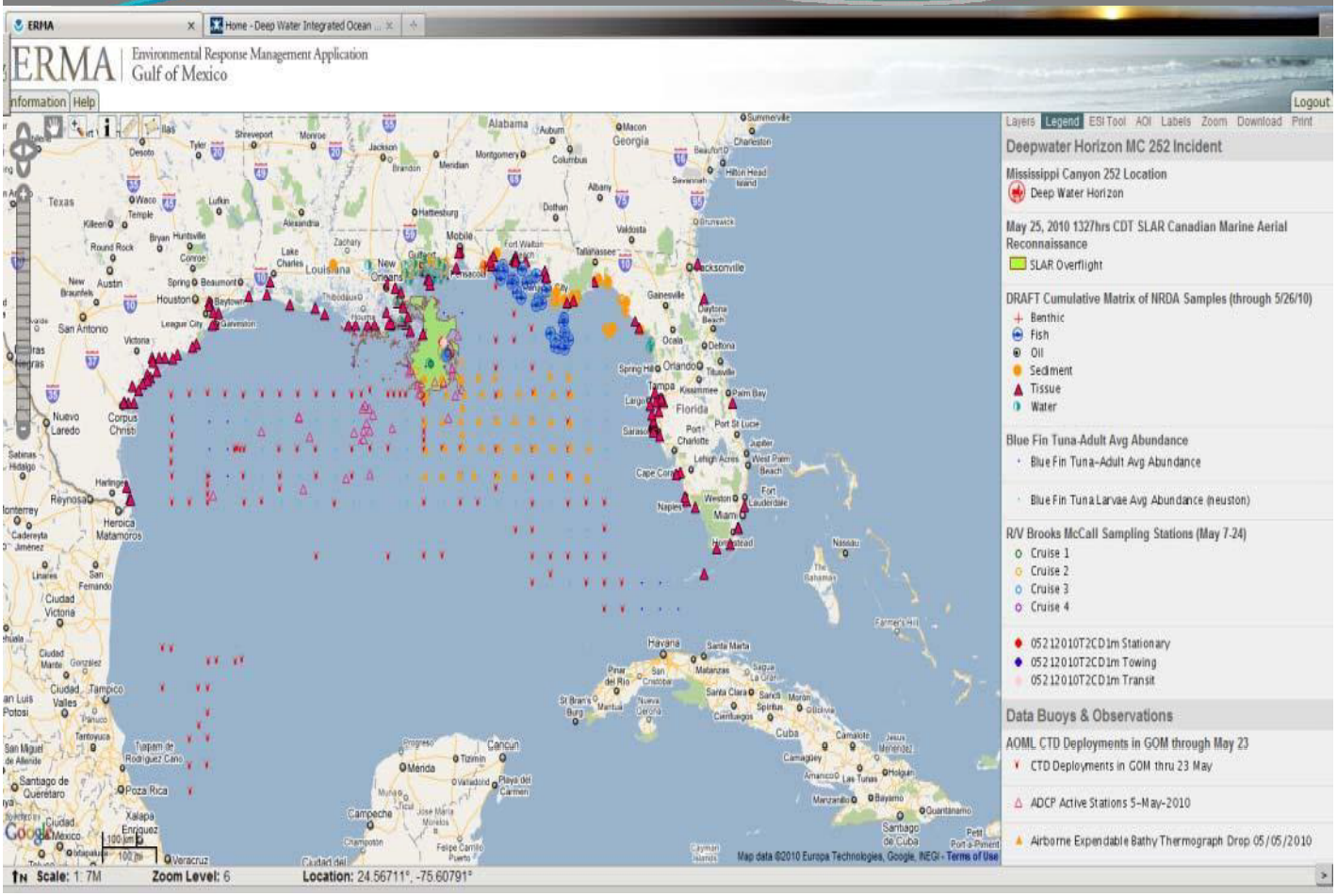
Where are we now with Sub-Surface Sampling?

- All actual sub-surface water sampling results to date indicate low ppm (very near field) to ppb farther, to negative results (farther field)
- Considerable numbers of government, BP and academic assets now devoted to this activity with more being proposed each day
- Some data already collected not usable because of collection and storage protocols
- Tactical situation confused by natural oil/methane, other organic compounds (plasticizers) and biologics in the water column
- Suggest we set up a workshop to review results and harmonize approaches to date before any additional cruises are planned except for required monitoring activities

Near-Term Science Actions 1-6 months)

- Continued scientific support to the IC through USCG Federal On-Scene Coordinator (including trajectory predictions, Loop Current evaluation, predicted shore line impacts, etc.).
- Mass balance calculations to understand surface and sub-surface fractions of total release
- Continued assessment of shoreline oil impacts and support for scientifically appropriate clean-up actions
- Additional studies of the impacts of dispersants
- Continued surveys to assess the magnitude, characteristics, fate, transport and near-term effects of subsurface dispersed oil
- Longitudinal surveys of potential oil and dispersants in seafood species in closed and open areas
- Identification and initiation of studies to quantify natural resource injuries
- Additional human dimensions studies to understand the impact of the event on coastal communities

Collected over 2000 baseline samples



Over 800,000 gallons of dispersants used surface & subsurface
Are there tipping points in the ecosystem?

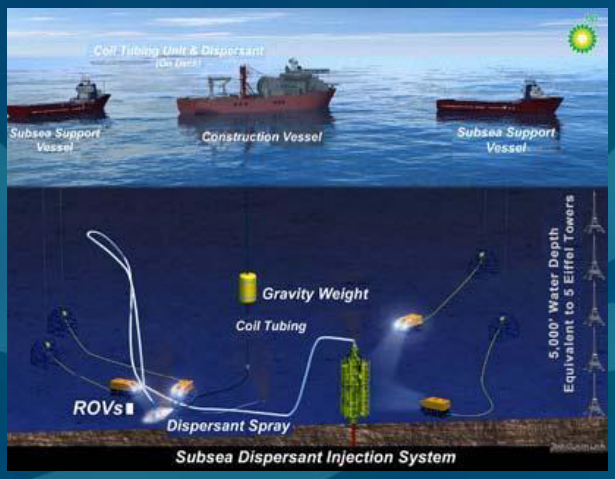


COREXIT® EC9500A

TECHNICAL PRODUCT BULLETIN #D-4
USEPA, OIL PROGRAM CENTER
ORIGINAL LISTING DATE: APRIL 13, 1994
REVISED LISTING DATE: DECEMBER 18, 1995
"COREXIT® EC9500A"
(formerly COREXIT 9500)

a. Toxicity

Material Tested	Species	LC50 (ppm)
COREXIT® EC9500A	Menidia beryllina Mysidopsis bahia	25.20 96-hr 32.23 48-hr
No. 2 Fuel Oil	Menidia beryllina Mysidopsis bahia	10.72 96-hr 16.12 48-hr
COREXIT® EC9500A & No. 2 Fuel Oil (1:10)	Menidia beryllina Mysidopsis bahia	2.61 96-hr 3.40 48-hr



· BP is using large amounts of COREXIT as a dispersant both at the surface, and two tests were performed at the well head

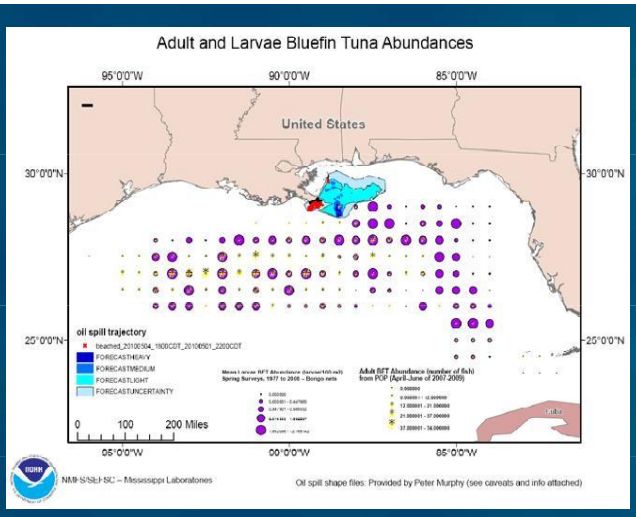
· EPA suspended deep water injection but a significant ongoing issue is the relative impacts of deep vs. surface application

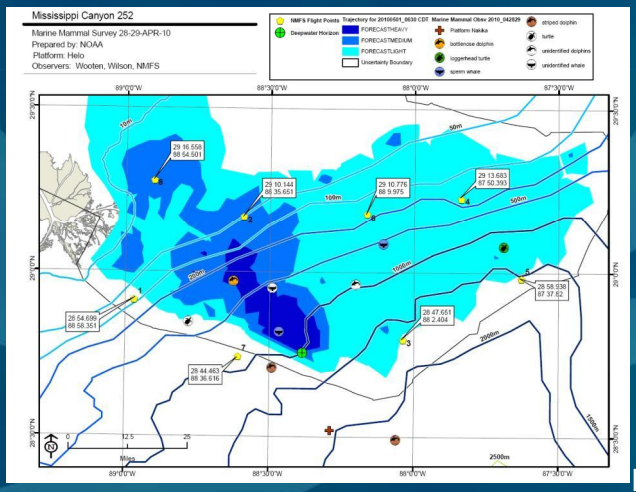
· COREXIT is mildly toxic to silverside fish and a shrimp-like species and some data exist for other species (25-32 PPM result in 50% test mortality)

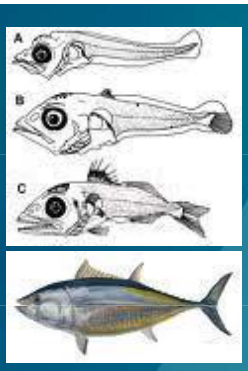
· However, in combination with No 2 crude the result is more toxic than COREXIT only

· No toxicity tests with Light Louisiana crude from site

Need Testing to understand long-term impacts











Deep water giant squid

· What resources are potentially at risk for LMRs from the dispersal of oil and dispersants and the synergy?

· BFT spawning in the region offshore from the spill from April-June – NOAA FSV GORDON GUNTER cruise completed

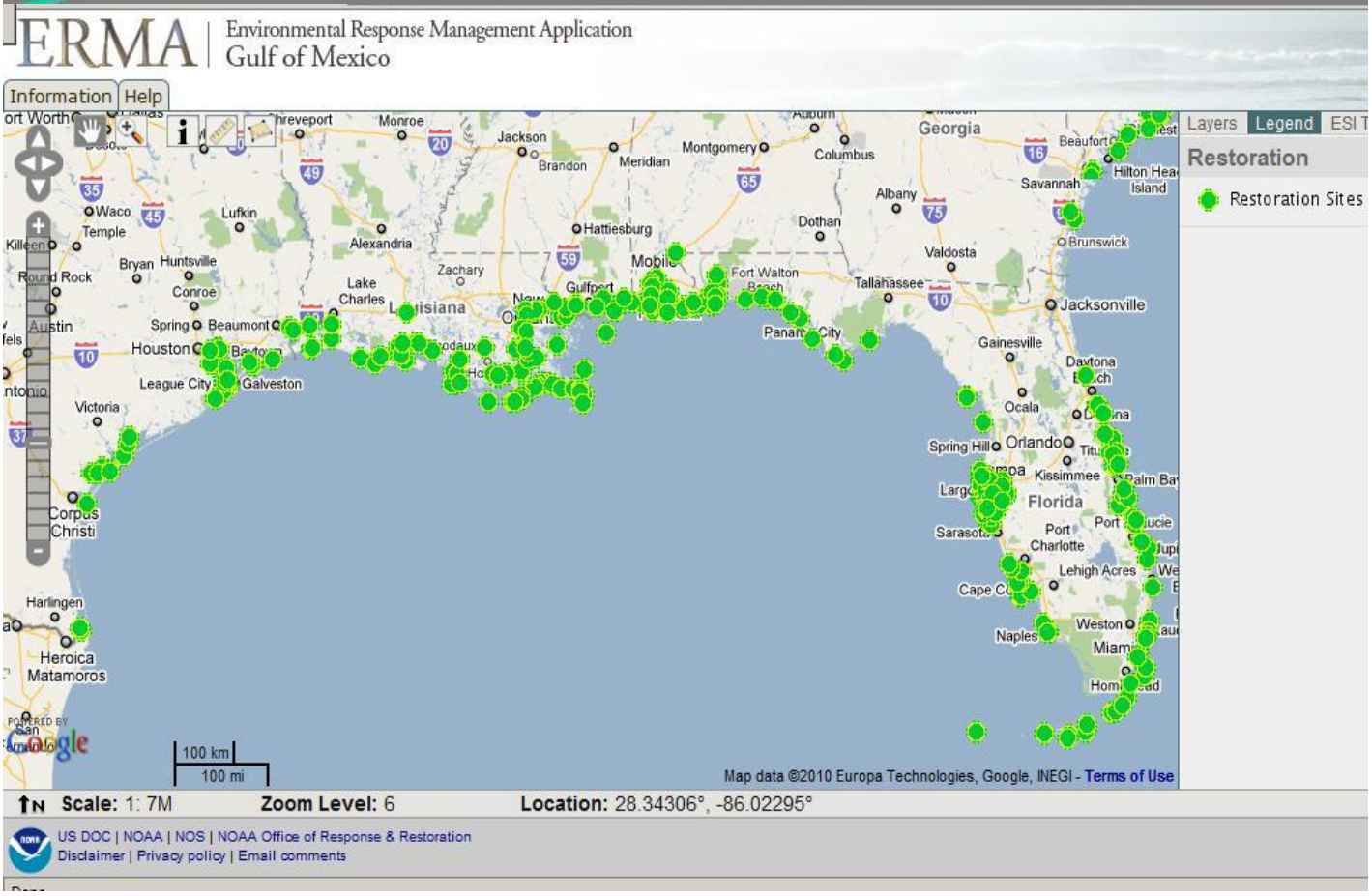
· Samples of sperm whale tissue and squids available from cruise last summer and winter as baselines

· Overflights continue to monitor protected species

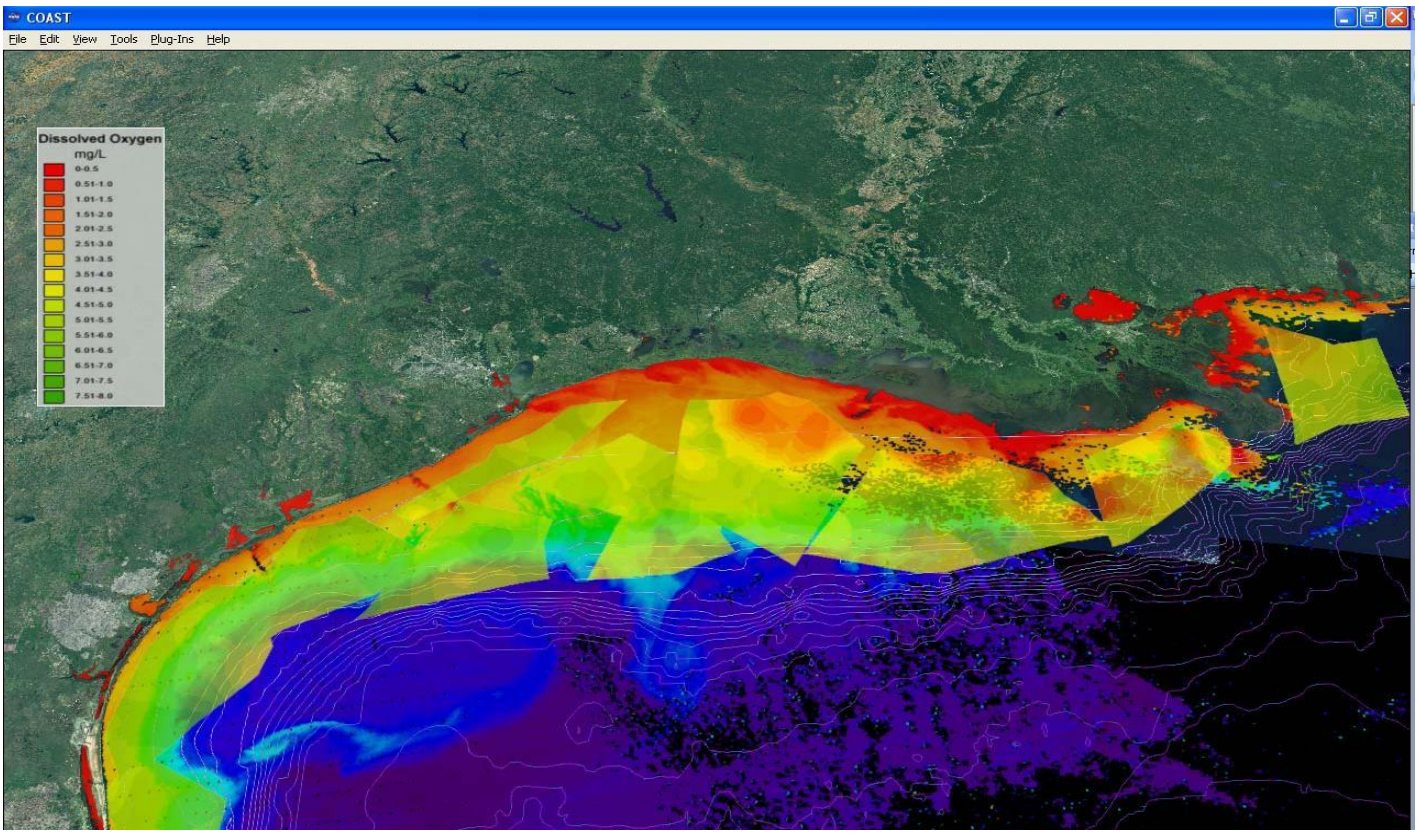
Long-Term Science Actions (2 mos. to decades)

- Ecosystem-level Impacts of the spill
  - Impacts of the spill on productivity, nutrient cycling and species composition near and off-shore habitats
  - Impacts of the spill on productivity, nutrient cycling and species composition of Louisiana marshes
- Development and implementation of ecosystem-level restoration opportunities for the Northern Gulf of Mexico
- Studies to identify on long-term effects of introduction of tons of reduced carbon into the Gulf ecosystem
  - Effects on Hypoxia distribution and seasonality in the GOM
  - Effects on HABs and other human health pathogens
- Mid to long term socio-economic impacts of the spill on coastal Gulf Coast States

Many Restoration Sites Already Exist – Best Remediation Practices?



Effects of Spill on an area already challenged by hypoxia



We Need a more Holistic Ecosystem Approach to Understanding Long-Term Impacts



Document ID: 0.7.19.1403.1

Received(Date): Wed, 02 Jun 2010 16:56:33 -0400
From: Scott Smullen <Scott.Smullen@noaa.gov>
Subject: Re: URGENT -- Seafood Safety Talking Points
To: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, Eric Schwaab <Eric.Schwaab@noaa.gov>,Samuel Rauch <Samuel.Rauch@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,Nancy Thompson <Nancy.Thompson@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
FDA and NOAA Role in the Gulf Coast - blended v2.docx

Thanks Lauren. I've used your documents to craft a blended version of our talkers and FDAs talkers (attached). I've just asked John and Steve for help at the SES conference. Please standby... I don't have much time. -s

Lauren.B.Lugo wrote:

> John and Scott-- Attached are updated tps, faqs, and fact sheet to address the earlier comments. Also attached are answers to the three questions asked by Monica Medina. Lauren
>
> Sarri, Kristen wrote:
>
> > We have a process for clearing seafood talking points and Q&As.
> >
> > Scott and John if you can work together with the appropriate NOAA staff (John, Lauren, and Steve) that would be great.
> >
> > We need to merge our TPs and Q&As with FDAs on seafood safety. Once we work with FDA on this and the document is agreed to by us and FDA then we will send to WH for clearance.
> >
> > To the document that we already have (Scott is QB), we need to add a TP and Q&A that address that US seafood is safe and international concerns that are being raised.
> >
> > Also, if we want to release the baseline data to the states then we also need to add TP and Q&As on baseline data per Nance Beck's request yesterday (John Rapp has this information).

Can we get this done with FDA in the next 90 minutes?

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Wednesday, June 02, 2010 3:48 PM
To: Spring, Margaret
Cc: Oil spill staff (dwh.staff@noaa.gov); Sarri, Kristen
Subject: Re: tps on seafood safety?

Here are two docs that have seafood safety talkers. There are more in the hopper, but they're probably at least 24 hours away from being cleared.

John

Margaret Spring wrote:

What do we have in the can that I could send up above?

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

B6 Privacy

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
B6 Privacy
fax: B6 Privacy

--
Scott Smullen
Deputy Director
NOAA Communications & External Affairs
B6 Privacy o / B6 Privacy c

FDA & NOAA Talking Points
Gulf Seafood Safety
6/02/10 - updated
For internal use only

FDA and NOAA Role in the Gulf Coast

- FDA and NOAA are closely monitoring the developing situation in the Gulf Coast region to help ensure that seafood potentially impacted by the oil spill is not making its way into commerce.

- The FDA and NOAA are working with state officials in Texas, Louisiana, Mississippi, Alabama, and Florida, as well as coordinating with EPA and other federal agencies.

FDA scientists have worked with experts at NOAA's National Seafood Inspection Laboratory in Pascagoula, Miss., to develop methods of testing fish, crabs, shrimp, and oysters, for harmful oil residues. These methods will be used to help determine when closed harvest waters can be re-opened.

NOAA has the authority to close fishing areas in federal waters to make sure potentially tainted fish are not caught—and to re-open them once the oil is no longer in the area, minimizing the economic effects on coastal communities as much as possible.

NOAA and the FDA agree that closing harvest waters which have been or are likely to be exposed to the oil is the best way to protect the public from potentially contaminated seafood.

Although NOAA believes that all areas with observable sheen are closed, NOAA also advises fishermen not to fish in areas where they observe sheen, even if they are outside a closed area.

FDA specific

- One of FDA's mobile labs is deployed to the Gulf Coast and will be used to conduct prescreening analysis of seafood samples being evaluated to determine if waters closed to fishing and shellfish harvesting can be re-opened.

- The FDA operates a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, the Public Health Service Act, and related regulations.

– The FDA program includes research, inspection, compliance, enforcement, outreach and the development of regulations and industry guidance.

– FDA's support in the Gulf Coast will help ensure that fish and shellfish harvested are safe to eat.

NOAA Specific

- NOAA has the authority to open and close harvest areas in Federal waters through authorities specific to oil spills in the Magnuson Stevens Act.
- NOAA Fisheries has expertise in collecting and analyzing seafood for safety and quality using both sensory analysis and chemical analysis to detect oil contamination in seafood. It can also provide training on sensory analysis to State and local representatives.
- The NOAA Fisheries labs have expertise and knowledge specific to collection and analysis of seafood samples. The National Seafood Inspection Laboratory in Pascagoula, Miss., serve as a staging area for sample collection, preparation and storage in the Gulf region. The Northwest Fisheries Science Center has the expertise to conduct chemical analysis on seafood samples to detect the presence of hydrocarbons and other compounds as well as longer term research on the effect of an oil spill on the seafood supply.
-
- We need quantitative data here: Consumers want to start seeing results…
- How many testers do we have?
- How many chemical analysis results do we have in so far? FDA's Q&A below implies we have no concerns about PAH levels so far.
- Is it true that for results to come back for sensory testing it takes about 3 days and for chemical testing takes about 5 days?

  I understand that NOAA will make these results available after the data are reviewed for quality assurance purposes, but it seems a slow process to some.

Seafood Safety

- Fish and shellfish harvested from areas unaffected by the closures are considered safe to eat.
  - NOAA is closely monitoring the surface and subsurface movement of petroleum and is expanding the closed fishing area as needed.
- There is no reason to believe that any contaminated product has made its way to the market.
- Closely monitoring and, if warranted, closing harvest waters which could be exposed to the oil should prevent unsafe seafood from reaching the market. If, despite these steps, adulterated seafood is found on the market, both the FDA and the states have the authority to seize such product and remove it from the food supply.
- Available information indicates that the dispersants being used to combat the oil spill do not accumulate in seafood and therefore there is no public health concern from them due to seafood consumption. FDA will continue to monitor the use of dispersants and evaluate any changes in their use or composition.

Closed Waters

- NOAA has acted to close contaminated waters. FDA agrees that NOAA's closure of these federal waters is an appropriate public health measure to prevent potentially unsafe seafood from being harvested and reaching consumers.

    - NOAA ‘s current fishing area closures encompass areas known to be currently affected by oil, either on the surface or below the surface, as well as areas projected to be affected by oil. The areas closed to fishing in the Gulf include a five nautical mile buffer area around the known location of oil. This is a precautionary measure to further ensure the safety of the seafood products being caught. This approach recognizes that decisions about re-openings will err on the side of public safety.

- The FDA and NOAA have agreed on the protocol to test seafood from the Gulf before NOAA re-opens Gulf fishing areas to commercial and recreational fishing. Both agencies feel confident that when this protocol is followed, the seafood harvested from the re-opened areas will be fit for consumption.

    - This protocol includes a sensory analysis of the seafood, conducted by trained experts who will check the scent, followed by a chemical analysis to verify the results. This combination will provide strong assurance that seafood is safe for human consumption.

- Some harvest waters under state jurisdiction have also been closed.

- FDA and NOAA have held multiple calls with state officials in Texas, Louisiana, Mississippi, Alabama, and Florida to discuss the protocol for reopening waters closed in response to the oil spill. The FDA feels confident that the protocol used to re-open federal waters can also be used to affirm the safety of state harvest waters before they are re-opened.

- NOAA has the authority to close federal waters to commercial fishing and states have the authority to close waters within the state 3-mile limit. The FDA is working with both NOAA and the states to monitor the situation and ensure that appropriate closures are in place.

NOAA Testing of Seafood

- NOAA has the expertise and knowledge needed for collecting and analyzing seafood to detect contamination. NOAA’s Seafood Inspection experts regularly inspect seafood for quality and that it meets food safety regulations for processing.
- NOAA is collecting a variety of types of seafood including finfish, shrimp, crabs, and shellfish for analysis. Samples are compared to baseline samples from un-oiled areas, as well as samples taken after Hurricanes Katrina and Rita. All of these baseline and post hurricane samples demonstrate that Gulf seafood was safe prior to the spill and provide a comparative standard for safety in the region following the spill.
- Testing involves sensory and chemical analysis of fish and shellfish. The sensory standard for comparison is based on samples of surface water mixed with a combination of oil and dispersants. Sensory experts check the scent, taste, and look of seafood. Chemical analysis of oil allows scientists to conclusively determine whether

contaminants in fish are present and to what level and whether the contaminants are due to the spill or related clean-up activities.

- The combination of sensory and chemical analysis provides important results in the monitoring process. When seafood fails the sensory test, chemical analysis is not needed. When seafood passes the sensory tests, chemical analysis will validate that the seafood is safe for consumption.
- NOAA's seafood inspection experts are training state employees in sensory analysis, so that more experts can be available to examine fish.
- Results of samples will be made available to the public through existing channels and a dedicated website which is under development.

Questions and Answers

Q: Is seafood harvested in the Gulf Coast area safe?
A: Fish and shellfish harvested from areas unaffected by the closures are considered safe to eat. NOAA is closely monitoring the surface and subsurface movement of petroleum and is expanding the closed area as needed. The states are also closing harvest waters under their jurisdiction as needed. There is no reason to believe that any contaminated product has made its way to the market.

Closing harvest waters which could be exposed to the oil is the best way to protect the public from potentially contaminated seafood, because it keeps the product from entering the food supply.

These are confusing…..

Are any results available yet from the seafood testing? What do they show?

- Baseline samples are being processed and analyzed now. We already have a good understanding of the baseline.
- Results will be available on an ongoing basis. Some samples collected in areas that were thought to be contaminated by oil but where oil was no longer present when the samples were collected are being analyzed now. NOAA will make these results available after the data are reviewed for quality assurance purposes.

If you don't have any results, how can you be certain that seafood caught in the last few weeks wasn't contaminated?

- NOAA prohibited harvesting from areas in federal waters where oil is present, has been present, or is likely to be present based on projections of surface oil distributions.
- This includes areas known to be currently affected by oil, either on the surface or below the surface as well as a five nautical mile buffer area around the known location of oil as a precautionary measure to further ensure the safety of the seafood products being caught.
- Seafood fisheries will remain closed until testing is completed to confirm that the seafood is acceptable for harvest and human consumption.

Q: How will the Federal government and the states determine that harvest waters closed due to contamination from the oil spill can be re-opened?
A: FDA and NOAA have agreed on a protocol to determine when closed federal harvest waters can be re-opened. Both agencies feel confident that when this protocol is followed, the seafood harvested from the re-opened areas will be fit for consumption. Under the protocol harvest waters will not re-open until oil from the spill is no longer present and the seafood samples from the area successfully pass both sensory analysis by trained experts and a chemical analysis to ensure there are no harmful oil residues. FDA and NOAA have shared this protocol with the states and encouraged them to use it to affirm the safety of state harvest waters prior to re-opening.

Q: How will FDA assure the safety of seafood after the fishing and shellfish harvesting areas are allowed to re-open?
A: Federal and state waters closed due to contamination from the oil spill will only be re-opened for harvesting after it has been determined that seafood harvested from those areas is safe for consumption. The FDA oversees a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, The Public Health Service Act, and related regulations. If adulterated seafood is found on the market, both the FDA and the states have the authority to seize the product and remove it from the food supply.

- The FDA and NOAA have agreed on a protocol to determine whether an area can be opened. The title is *Protocol for Interpretation and Use of Sensory Testing and Analytical Chemistry Results for Re-Opening Oil-Impacted Areas Closed to Seafood Harvesting.*
- Openings of parts or all of the areas currently closed when the area is considered directly contaminated by the oil spill will only occur if the results of the sensory and chemical analyses indicate that seafood species meet the FDA-approved public health criteria in the protocol.

Q: Who is responsible for the closing of federal and state harvest waters?
A: NOAA has the authority to close federal waters to commercial fishing and states have the authority to close waters within the state 3-mile limit. The FDA works closely with NOAA and the states whenever commercial fishing waters are closed for public health reasons and again when they are re-opened to harvest.

Q: How can I find out about closures?
A: Information about the closure of federal waters can be found at http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm
Information about the closure of state harvest waters can be found on the respective state's web sites.

- Alabama: http://outdooralabama.com/fishing/
- Florida: http://www.myfwc.com/OilSpill/index.htm
- Louisiana: http://www.wlf.louisiana.gov/oilspill/
- Mississippi: http://www.dmr.state.ms.us/
- Texas: http://www.tpwd.state.tx.us/site/emergency/

Q: What affect will the oil dispersant have on seafood in the area?
A: Available information indicates that the dispersants being used to combat the oil spill do not accumulate in seafood and therefore there is no public health concern from them due to seafood consumption. FDA will continue to monitor the use of dispersants and evaluate any changes in their use or composition.

Q. What is FDA's response to Rep. Markey?

A. The FDA thanks Congressman Markey for his correspondence and we will respond directly to his concerns in a letter addressed to him.

Q. Does the FDA currently plan to conduct a long-term study on the effects of dispersants such as Corexit on seafood and on humans who consume that seafood? If so, how would it be structured and long would it last?

A. Available information indicates that the dispersants being used to combat the oil spill do not accumulate in seafood. We are working with other sectors of the federal and state government and others to monitor the use of dispersants and evaluate any changes in their use or composition.

Q. Are there similar long-term studies the FDA has conducted that it can draw on in developing this study or will this be new territory?

A. No known long-term studies have been completed during past oil spills on the dispersants used.

Q. How is FDA keeping that seafood out of the market?

A. NOAA has implemented closures in federal waters. This is the best measure to prevent contaminated seafood from entering the marketplace. In addition we have been working on reopening protocols that will be used to determine the safety of fish for consumption. Also the FDA will use its robust Hazard Analysis Critical Control Points (HACCP) system to help us in ensuring the safety of seafood from this area. The HACCP system is science-based and works to reduce seafood related illnesses to the lowest possible levels.

Q. What ongoing additional testing does the FDA think is necessary to protect against contamination of seafood from the oil spill?

A. Protection of the public from contaminated seafood is achieved through the closure of federal and state waters that are impacted by the spill. To date all such waters are closed. This is the most effective means to prevent any contaminated product from reaching the public. In addition to closures, other steps to be taken will be establishing protocols for reopening, testing for polycyclic aromatic hydrocarbons (PAHs) and ongoing surveillance of the impacted areas.

Q. Have they started testing seafood in the area? Which fish/sea creatures are being tested? If so, what have been the results of the testing?

A. Testing so far has been on finfish collected aboard NOAA research vessels on both sides of the closure line to ensure that the closure is sufficiently protective - that is that it encompasses impacted waters. So far there have been no concerns about the PAH levels they have seen in federal waters. Species tested were oysters, Red Snapper (finfish), Red drum (finfish). This testing serves to help establish a baseline for contamination before oil contamination of the waters.

Q. Would the tests done in the future be similar to what has already been done? Please explain the tests -- how they work, what technology they depend on?

A. In addition to our response in question #1, we will be doing organoleptic testing (the use of human senses (smell, taste, sight, touch, etc. to detect problems), risk-based assessments of seafood and ongoing monitoring and surveillance of the impacted waters.

Q. What contaminants is/ would the agency be looking for?

A. Polycyclic aromatic hydrocarbon (PAH). PAH is a group of contaminants found in petroleum products.

Q. How long does the agency expect the oil spill to pose a threat to seafood from the area?

A. At present, this is not known. However the FDA's robust HACCP system, a science-based system used to help us determine the safety of seafood will be implemented to ensure that seafood from the impacted area is safe for consumption. This coupled with continuing surveillance.

Q. Is there any concern that the crude could increase the conversion of organic mercury into methyl mercury?

A. Methyl Mercury (MeHg) is organic mercury. They are one and the same.

Received(Date): Wed, 02 Jun 2010 17:04:03 -0400
From: Michael Jarvis <Michael.Jarvis@noaa.gov>
Subject: NRDA 1-pagers Cleared?
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Hi all,

These NRDA 1-pagers are great. Are these cleared to send out? I'd like to send them to staff on the Hill who are asking about the status of the NRDA and NOAA's role.

Mike

--
Michael G. Jarvis
Congressional Affairs Specialist
Office of Legislative and Intergovernmental Affairs
National Oceanic and Atmospheric Administration
1401 Constitution Ave. NW, Room 5224
Washington, DC 20230
E-mail: michael.jarvis@noaa.gov
Office: B6 Privacy

DAMAGE ASSESSMENT, REMEDIATION, & RESTORATION PROGRAM

DARRP

Office of Response and Restoration • Office of Habitat Conservation • General Counsel for Natural Resources

Oil Spills: NOAA Assessment and Restoration

Under the Oil Pollution Act of 1990, a Natural Resource Damage Assessment is the legal process to determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of an oil spill.

Key Facts

- **NOAA's Role?** NOAA is the lead federal trustee for protection and restoration of coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.
- **How Many Spills?** NOAA responds to up to 150 oil spills of all sizes each year.
- **Past Success?** In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- **Who Benefits?** Restoration of wetlands, coral and shellfish reefs, beaches and rivers benefit coastal communities that rely on vibrant fisheries and thriving wildlife for recreation, tourism, and food.

How We Work

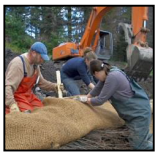
NOAA works cooperatively with other natural resource trustees and, when possible, the party responsible for the pollution. The Damage Assessment process promotes cost-effective assessment and restoration—benefiting the public, the responsible party, and the environment.



On April 22, 2010, the oil rig Deepwater Horizon MC252 sank off the coast of Louisiana, resulting in a leak of millions of gallons of oil from the well approximately a mile below the surface of the ocean.









NOAA acts as a trustee on behalf of the public to restore coastal and marine resources injured by oil spills and hazardous substance releases, and vessel groundings.

After an Oil Spill: What Happens Next?

During and after an oil spill, there are three main steps to restore impacted areas:

- **Preassessment:** Determine whether injury to natural resources has occurred. Work includes collecting time-sensitive data, reviewing scientific literature about the oil and its impact on coastal resources and determining the extent and severity of injury.
- **Injury Assessment and Planning:** Scientific and economic studies assess and quantify the injuries and the loss of services. A restoration plan is developed to identify restoration projects.
- **Restoration:** Work with the public and responsible party to select, implement, and monitor restoration projects. The responsible party pays for assessment and restoration costs.

DARRP - Protecting and restoring natural resources nationwide

Document ID: 0.7.19.1402

DAMAGE ASSESSMENT, REMEDIATION, & RESTORATION PROGRAM

DARRP

Office of Response and Restoration • Office of Habitat Conservation • General Counsel for Natural Resources

Deepwater Horizon Oil Spill: NOAA Assessment and Restoration

On April 20, an explosion on the Deepwater Horizon MC252 drilling platform in the Gulf of Mexico caused the rig to sink and oil began leaking into the Gulf. This significant spill poses a serious threat to wildlife and the fishing community along the large coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida. Although it will be months before the full extent of the damage will be known, the spill is impacting the Gulf coastline, and NOAA is acting quickly to begin preliminary assessments and plan for restoration along the coast.

NOAA's Role

To help determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of the spill, a Natural Resource Damage Assessment will be conducted by NOAA. Although many agencies are involved in this process, NOAA is the lead federal trustee for coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.



Early response to the explosion (photo courtesy U.S. Coast Guard).

Key Facts

- NOAA responds to up to 150 oil spills of all sizes each year.
- In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- NOAA and the other trustees involved hold the responsible party accountable for assessment and restoration costs.



Vessels skimming oil from the Deepwater Horizon.

Potential Impacts of the Deepwater Horizon Spill

The oil spill is impacting Louisiana's shoreline habitats and fisheries, as well as current and completed restoration projects on the coast.

- Fisheries: During past oil spills in the Gulf of Mexico, NOAA has documented direct toxic impacts to commercially important aquatic life including blue crabs, squid, shrimp and a variety fish species. Toxins in the oil can kill these species or have other harmful effects such as: DNA damage, liver disease, cancer, and reproductive, developmental, and immune system impairment in fish and other organisms
- Habitat: The presence of discharged oil in the environment may cause decreased habitat use in the area, altered migration patterns, altered food availability, and disrupted life cycles. Oiled plants could die, eliminating the roots that help bind and stabilize soil, leading to erosion.
- Restoration: There are many NOAA restoration projects that could be affected by the spill, including two large-scale American Recovery and Reinvestment Act projects.

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Oil Spills: NOAA Assessment and Restoration

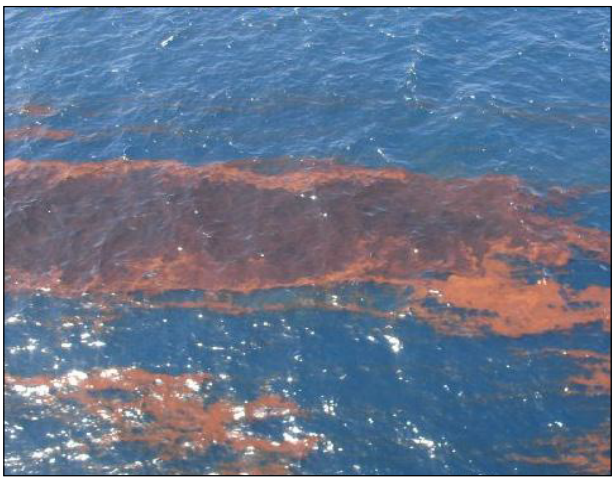
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How We Work

NOAA works cooperatively with other natural resource trustees and, when possible, the party responsible for the pollution. The Damage Assessment process promotes cost-effective assessment and restoration—benefiting the public, the responsible party, and the environment.



On April 22, 2010, the oil rig Deepwater Horizon MC252 sank off the coast of Louisiana, resulting in a leak of millions of gallons of oil from the well approximately a mile below the surface of the ocean.









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After an Oil Spill: What Happens Next?

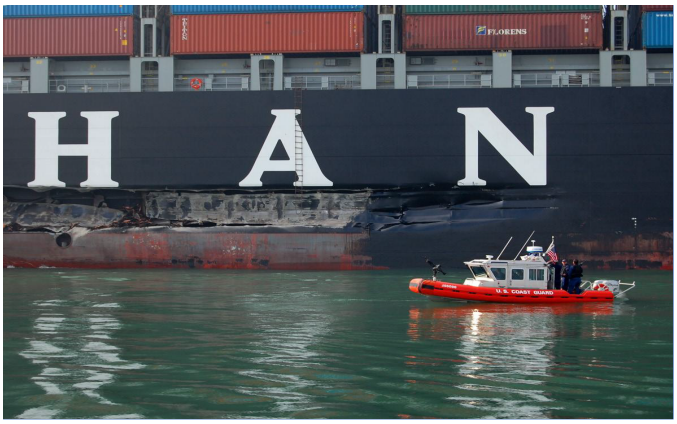
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- Injury Assessment and Planning: Scientific and economic studies assess and quantify the injuries and the loss of services. A restoration plan is developed to identify restoration projects.
- Restoration: Work with the public and responsible party to select, implement, and monitor restoration projects. The responsible party pays for assessment and restoration costs.

Document ID: 0.7.19.1402.1

Five Notable Oil Spills of Recent Years

- British Petroleum Deepwater Horizon MC252 Rig, Louisiana: On Earth Day, April 22, 2010, an oil rig in the Gulf of Mexico sank after suffering damages from an explosion and fire two days prior. Millions of gallons of oil have leaked from the well approximately a mile below the surface of the ocean. Preliminary assessments have begun, but response is still underway. It could be months or years before the full extent of the injuries are known and restoration can begin. NOAA is concerned about ongoing and long-term impacts to fish, shellfish, marine mammals, turtles, birds, and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals, and the water column.
- Barge DM932 and Tintomara, Louisiana: In July 2008, the chemical tank ship Tintomara collided with the American Commercial Lines barge DM932 near downtown New Orleans, resulting in a spill of 270,000 gallons of oil. Clean-up of the incident took several months. Injuries are being assessed.
- Cosco Busan, California: In November 2007, the container ship M/V Cosco Busan struck the San Francisco-Oakland Bay Bridge in San Francisco Bay and tore a large gash in the hull of the vessel, and 53,000 gallons of fuel oil were released into the water. The oil spread along many miles of sensitive coastline, including beaches, rocky intertidal habitats, coastal lagoons, and wetlands.
- Chalk Point, Maryland: On April 7, 2000, a leak was detected in an underground pipeline that supplies oil to the Potomac Electric Power Company Chalk Point generating station in Aquasco, Maryland. Approximately 140,000 gallons of fuel oil spilled into Swanson Creek, and about 40 miles of envrionmentally-sensitive downstream creeks and shorelines were oiled as a result. This case was settled in 2002, and the trustees have undertaken a series of restoration projects to address natural resource and lost use injuries associated with the fuel pipeline leak.
- Athos Spill, Delaware, New Jersey and Pennsylvania: In November 2004, the M/T Athos I struck a large, submerged anchor while preparing to dock at a refinery in Paulsboro, New Jersey. The anchor punctured the vessel's bottom, resulting in the discharge of nearly 265,000 gallons of crude oil into the Delaware River and nearby tributaries. Injuries are being assessed. The claim has been submitted to the National Pollution Fund Center for adjudication.



Hole in the Cosco Busan container ship, which spilled 53,000 gallons of oil in San Francisco Bay in 2007.

Deepwater Horizon Spill: Assessing Impacts to Gulf of Mexico Fisheries and Coastal Wetlands





Left: NOAA Administrator Dr. Jane Lubchenco, NOAA Fisheries Assistant Administrator Eric Schwaab, and Council on Environmental Quality Chair Nancy Sutley assess how the sample is processed aboard the Research Vessel Caretta and chain of custody protocol used when handling specimens associated with the oil spill. Right: Scientist Dr. Dennis Apeti, brings up a trawl full of oysters for testing.

For further information about DARRP, please visit
http://www.darrp.noaa.gov

Document ID: 0.7.19.1402.1



Deepwater Horizon Oil Spill: NOAA Assessment and Restoration

On April 20, an explosion on the Deepwater Horizon MC252 drilling platform in the Gulf of Mexico caused the rig to sink and oil began leaking into the Gulf. This significant spill poses a serious threat to wildlife and the fishing community along the large coastal areas of Louisiana, Mississippi, Texas, Alabama, and Florida. Although it will be months before the full extent of the damage will be known, the spill is impacting the Gulf coastline, and NOAA is acting quickly to begin preliminary assessments and plan for restoration along the coast.

NOAA's Role

To help determine the type and amount of restoration needed to compensate the public for harm to natural resources as a result of the spill, a Natural Resource Damage Assessment will be conducted by NOAA. Although many agencies are involved in this process, NOAA is the lead federal trustee for coastal and marine natural resources, including marine and migratory fish, endangered species, marine mammals and their habitats.

Key Facts

- NOAA responds to up to 150 oil spills of all sizes each year.
- In response to oil spills, NOAA has restored thousands of acres of coastal habitat in the past 18 years.
- NOAA and the other trustees involved hold the responsible party accountable for assessment and restoration costs.



Early response to the explosion (photo courtesy U.S. Coast Guard).

Potential Impacts of the Deepwater Horizon Spill

The oil spill is impacting Louisiana's shoreline habitats and fisheries, as well as current and completed restoration projects on the coast.

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- Restoration: There are many NOAA restoration projects that could be affected by the spill, including two large-scale American Recovery and Reinvestment Act projects.



Vessel skimming oil from the Deepwater Horizon.

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Document ID: 0.7.19.1402.2



Oil in Louisiana wetlands during the Deepwater Horizon Oil Spill, May 2010. Although it will take months to understand the full extent of the impact, NOAA staff are working through preliminary assessments as part of its efforts as a Natural Resource Damage Assessment trustee.

Who are the Trustees?

Trustees protect, manage, and restore the natural resources that are held in trust for current and future generations. Trustees include the U.S. Departments of Commerce, Interior, Defense, Agriculture, and Energy; state agencies; and Native American tribes.

What Happens Now?

During and after an oil spill, there are three main steps to restore impacted areas:

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Assessing Impacts to Gulf of Mexico Fisheries and Coastal Wetlands



NOAA Administrator Dr. Jane Lubchenco, NOAA Fisheries Assistant Administrator Eric Schwaab, and Council on Environmental Quality Chair Nancy Sutley assess how the sample is processed aboard the Research Vessel Caretta and the chain of custody protocol used when handling specimens associated with the oil spill.

For further information about DARRP, please visit
http://www.darrp.noaa.gov

Document ID: 0.7.19.1402.2

Received(Date): Thu, 03 Jun 2010 08:44:18 -0400
From: Joe Inslee <Joe.Inslee@noaa.gov>
Subject: Talking points for this mornings Gov call
To: Monica Medina <Monica.Medina@noaa.gov>,Linda Belton <Linda.Belton@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Dave Westerholm <Dave.Westerholm@noaa.gov>
Medina Talking Point for Gov Call, 06.3.10.doc

Morning-
Talking points for Governors call.

Thank you,
-Joe Inslee

--
Joe Inslee
Policy/Outreach Assistant
Assessment and Restoration Division
NOAA Office of Response and Restoration
1305 East-West Highway SSMC 4, Rm. 10219
Silver Spring, MD 20910 Office B6 Privacy ext. 202
Cell B6 Privacy
Fax B6 Privacy

Talking Points for Governors Call

Trajectory Status:

- **Nearshore Trajectory Forecast**:

- On shore winds (predominantly SW) are expected to continue through Saturday with speeds of 10-15kts. These winds have resulted in northward movement of the slick towards the Mississippi/Alabama barrier islands.

- Trajectories show a northeastward movement over the next few days- threatening shorelines as far east as Freeport.

- The threat to shoreline in Breton Sound, Chandeleur Sound, and the NE side of the Delta continues to be reduced.

- To the west of the Delta, trajectories indicate that more shorelines impacts could occur between Timbalier Bay and SW Pass.

- **Offshore Trajectory Forecast:**

- Satellite imagery analysis continues to show narrow bands of oil to the SE and ESE of the main slick.

- Trajectories suggest these sheens will continue to be entrained in a large clockwise eddy (Eddy Franklin) that has pinched off the main Loop Current.

Document ID: 0.7.19.1348.1

- If this sheen persists or has tarballs associated with it, there is potential for some of it to become entrained into the Loop Current and move toward the Florida Straits.

Loop Current (IF ASKED):

- The northern part of the loop remains pinched off.
- NOAA is watching the loop current closely.
- This "pinching" off of an eddy is a normal and frequent occurrence and is partially driven by winds, weather, and water temperatures.
- The Gulf Loop current is dynamic and always changing. Sometimes, the Current barely enters the Gulf of Mexico before heading towards the Atlantic. At other times, it may travel close (or within about 100 miles) to the coast of Louisiana before swinging back towards the Florida Strait.
- The St. Petersburg Unified Command has completed strategic plans to minimize any potential impacts should they occur and remains prepared to protect the shoreline.
- Oil that may be entrained within the Loop current will continue to degrade over time as it flows through the current. The pinched-off eddy may reattach to the Loop current in a few weeks so NOAA will continue to monitor the current and oil spill locations daily.

Fisheries Closure:

- A change was made to the fisheries closure area yesterday.
- The closed area now represents 88,522 square miles, which is about 37 percent of Gulf of Mexico Federal waters.

Document ID: 0.7.19.1348.1

- NOAA will continue to evaluate the need for fisheries closures based on the evolving nature of the spill and will re-open closed areas as appropriate. NOAA will also re-evaluate the closure areas as new information that would change the boundaries of these closed areas becomes available.
- NOAA will continue to provide daily updates at http://sero.nmfs.noaa.gov by 12 pm EST with any changes to the closed area effective as of 6 pm EST the same day.
- The six-hour window is meant to give fishermen time to retrieve their gear from an area that is about to close, and advance notice of areas that will soon open for fishing. A status message will be updated daily, even when closed area has not changed, and will also be available on NOAA Weather Radio and by calling NOAA Fisheries Southeast Regional Office at 727-824-5305.

Seafood Safety:

- State personnel from Florida, Alabama, and Texas have completed seafood inspection training offered by NOAA and FDA. The second training session begins today and two more training sessions will be offered next week. The training focuses on sensory (smell) testing – the most sensitive test for detecting oil contamination of seafood.

- NOAA, FDA, and EPA continue to work with the Gulf states to align the federal and state seafood testing protocols. Our first call was this past Tuesday (June 1) and we were able to discuss the plan. There will be another call with the States tomorrow or early next week.

Document ID: 0.7.19.1348.1

Impacts to Marine Life (If Asked):

- The total number of sea turtles verified since April 30 within the "designated spill area" is 277. Three of those turtles have had external signs of oiling.
- To date, 29 dead dolphins have been verified since April 30 within the designated spill area. Only one of those dolphins has had external signs of oiling.

Florida Fisheries Disaster Declarations (IF ASKED):

- A fishery disaster was declared for Florida last night. This extends the disaster declaration already in place for Louisiana, Mississippi, and Alabama.
- This disaster determination will help ensure that the Federal government is in a position to mobilize the range of assistance that fishermen and fishing communities may need.

Document ID: 0.7.19.1348.1

Received(Date): Thu, 03 Jun 2010 12:14:00 -0400
From: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Subject: Re: Q&A
To: John Rapp <John.Rapp@noaa.gov>
Cc: Scott Smullen <Scott.Smullen@noaa.gov>
Seafood safety Questions and Answers_060310_Lugo Rapp.docx

Scott-- Attached.
Lauren

John Rapp wrote:
> Lauren,
>
> Can you add your edits to the attached, accept the changes, delete the
> comments, and send to Scott when you're done?
>
> Thanks,
> John

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
B6 Privacy
fax: B6 Privacy

NOAA and FDA Fishery Closure and Seafood Safety Response to Questions

~~**Questions and Answers**~~

Q: Is seafood harvested in the Gulf Coast area safe?
A: Fish and shellfish harvested from areas unaffected by the closures are considered safe to eat from oil and dispersant contamination. NOAA is closely monitoring the surface and subsurface movement of petroleum and is expanding the closed area as needed. The State of Louisiana has also closed harvest waters under their jurisdiction. There is no reason to believe that any contaminated product has made its way to the market.

Closing harvest waters which could be exposed to the oil is the best way to protect the public from potentially contaminated seafood, because it keeps the product from entering the food supply.

Question: Has NOAA started testing seafood in the area? Which fish/sea creatures are being tested?

- Yes, NOAA has started testing seafood. NOAA's testing so far has been on finfish, shrimp, and oysters collected aboard NOAA research vessels from areas not yet impacted by oil.

~~**Q: What type of samples will NOAA collect for seafood testing?**~~

~~**A:** NOAA is collecting tissue samples of a variety of types of seafood (e.g. finfish, shrimp, crabs, mollusks).~~

Are any results available yet from the seafood testing? What do they show?

- Two sets of results have been produced: baseline (pre-oil) and post-oil.
- The pre-oil results of PAHs from recently collected fish and shrimp tissue are available. These samples as well as samples taken after Hurricanes Katrina and Rita establish a baseline and demonstrate that Gulf seafood had low levels of PAH compounds prior to the spill and provide a comparative standard for safety in the region following the spill. The baseline data shows there have been no concerns about the PAH levels in fish from federal waters.
- A limited number of samples of finfish and shrimp have been collected in the vicinity of the Deepwater Horizon closure area. These results are not yet available. NOAA will make these results available as soon as possible after the data are reviewed by NOAA's scientists for quality assurance purposes. These and additional samples in the vicinity of the closure line will help ensure that the closure is sufficiently protective - that is that it encompasses impacted waters.

How can you be certain that seafood caught in the last few weeks wasn't contaminated?

- NOAA prohibited harvesting from areas in federal waters where oil is present, has been present, or is likely to be present based on projections of surface oil distributions.

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Comment [k1]: We have results, don't we? We have baseline and samples since that tiem.

- This includes areas known to be currently affected by oil, either on the surface or below the surface as well as a five nautical mile buffer area around the known location of oil as a precautionary measure to further ensure the seafood products being caught are not contaminated.
- Seafood fisheries will remain closed until testing is completed to confirm that the seafood is acceptable for harvest and human consumption.
- To account for the possibility that contaminated fish may move out of the closed area, NOAA will sample fish in the vicinity of the closed area. If these fish samples have elevated levels of oil compounds, it is an indication that the boundaries of the closed area need to be expanded.

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Q: How will the Federal government and the states determine that harvest waters closed due to contamination from the oil spill can be re-opened?
A: FDA and NOAA have agreed on a protocol to determine when closed federal harvest waters can be re-opened. Both agencies are confident that when this protocol is followed, the seafood harvested from the re-opened areas will be fit for consumption. Under the protocol harvest waters will not re-open until oil from the spill is no longer present and the seafood samples from the area successfully pass both sensory analysis by trained experts and a chemical analysis to ensure there are no harmful oil residues. FDA and NOAA have shared this protocol with the states and encouraged them to use it to affirm the safety of state harvest waters prior to re-opening.

Q: How will FDA assure the safety of seafood after the fishing and shellfish harvesting areas are allowed to re-open?
A: Federal and state waters closed due to contamination from the oil spill will only be re-opened for harvesting after it has been determined that seafood harvested from those areas is safe for consumption. The FDA oversees a mandatory safety program for all fish and fishery products under the provisions of the Federal Food, Drug and Cosmetic Act, The Public Health Service Act, and related regulations. If adulterated seafood is found on the market, both the FDA and the states have the authority to seize the product and remove it from the food supply.

- The FDA and NOAA have agreed on a protocol to determine whether an area can be opened. The title is *Protocol for Interpretation and Use of Sensory Testing and Analytical Chemistry Results for Re-Opening Oil-Impacted Areas Closed to Seafood Harvesting.*
- Openings of parts or all of the areas currently closed when the area is considered directly contaminated by the oil spill will only occur if the results of the sensory and chemical analyses indicate that seafood species meet the FDA-approved public health criteria in the protocol.

Q: Who is responsible for the closing of federal and state harvest waters?
A: NOAA has the authority to close federal waters to commercial fishing and states have the authority to close waters within the state 3-mile limit. The FDA works closely with NOAA and the states whenever commercial fishing waters are closed for public health reasons and again when they are re-opened to harvest.

Q: Why is NOAA prohibiting fishing in certain areas?

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A: NOAA Fisheries Service prohibited fishing in the area as a precautionary measure to ensure public safety and maintain consumer confidence of Gulf of Mexico seafood. Closing harvest waters which could be exposed to the oil is the best way to protect the public from potentially contaminated seafood, because it keeps the product from entering the food supply.

Q: How are we enforcing the closed areas?

A: The Coast Guard and NOAA are monitoring the closed areas to ensure that fishermen are not fishing within those areas, and will take enforcement action against fishermen violating the closure boundary.

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Q: How can I find out about closures?
A: Information about the closure of federal waters can be found at http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm
Information about the closure of state harvest waters can be found on the respective state's web sites.

- Alabama: http://outdooralabama.com/fishing/
- Florida: http://www.myfwc.com/OilSpill/index.htm
- Louisiana: http://www.wlf.louisiana.gov/oilspill/
- Mississippi: http://www.dmr.state.ms.us/
- Texas: http://www.tpwd.state.tx.us/site/emergency/

Q: What affect will the oil dispersant have on seafood in the area?
A: Available information indicates that the dispersants being used to combat the oil spill do not accumulate in seafood and therefore there is no public health concern from them due to seafood consumption. FDA will continue to monitor the use of dispersants and evaluate any changes in their use or composition.

Q. What is FDA's response to Rep. Markey?

A. The FDA thanks Congressman Markey for his correspondence and we will respond directly to his concerns in a letter addressed to him.

Q. Does the FDA currently plan to conduct a long-term study on the effects of dispersants such as Corexit on seafood and on humans who consume that seafood? If so, how would it be structured and long would it last?

A. Available information indicates that the dispersants being used to combat the oil spill do not accumulate in seafood. We are working with other sectors of the federal and state government and others to monitor the use of dispersants and evaluate any changes in their use or composition.

Q. Are there similar long-term studies the FDA has conducted that it can draw on in developing this study or will this be new territory?

A. No known long-term studies have been completed during past oil spills on the dispersants used.

Q. How is FDA keeping ~~that~~ potentially oil-contaminated seafood out of the market?

A. NOAA has implemented closures in federal waters. This is the best measure to prevent contaminated seafood from entering the marketplace. In addition we have been working on reopening protocols that will be used to determine the safety of fish for consumption. Also the FDA will use its robust Hazard Analysis Critical Control Points (HACCP) system to help us in ensuring the safety of seafood from this area. The HACCP system is science-based and works to reduce seafood related illnesses to the lowest possible levels.

Q. What ongoing additional testing does the FDA think is necessary to protect against contamination of seafood from the oil spill?

A. Protection of the public from contaminated seafood is achieved through the closure of federal and state waters that are impacted by the spill. To date all such waters are closed. This is the most effective means to prevent any contaminated product from reaching the public. In addition to closures, other steps to be taken will be establishing protocols for reopening, testing for polycyclic aromatic hydrocarbons (PAHs) and ongoing surveillance of the impacted areas.

~~**Q. What type of samples will NOAA collect for seafood testing?**~~

~~**A.** NOAA is collecting tissue samples of a variety of types of seafood (e.g. finfish, shrimp, crabs, mollusks).~~

~~**Q. Would the tests done in the future be similar to what has already been done? Please explain the tests -- how they work, what technology they depend on?**~~

~~**A.** In addition to our response in question #1, we will be doing organoleptic testing (the use of human senses (smell, taste, sight, touch, etc. to detect problems), risk-based assessments of seafood and ongoing monitoring and surveillance of the impacted waters.~~

Q. What contaminants is/ would the agency be looking for?

A. Polycyclic aromatic hydrocarbon (PAH). PAH is a group of contaminants found in petroleum products. The sensory assessors are trained to detect the combination of oil and dispersants.

Q. How long does the agency expect the oil spill to pose a threat to seafood from the area?

A. At present, this is not known. However the FDA's robust HACCP system, a science-based system used to help us determine the safety of seafood will be implemented to ensure that seafood from the impacted area is safe for consumption. This coupled with continuing surveillance.

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Q. Is there any concern that the crude could increase the conversion of organic mercury into methyl mercury?

A. Methyl Mercury (MeHg) is organic mercury. They are one and the same.

Q: What species are most vulnerable to oil contamination?

A: Seafood that can't move away from oil, such as oysters and clams, are the most vulnerable and more prone than finfish to accumulate potentially toxic substances after oil exposure.

Q: How are Highly Migratory Species affected by oil?

A: Highly Migratory Species such as tuna, billfish and other large species are finfish with high rates of metabolism. They are known to readily metabolize oil-related contaminants. Oil-related contaminants do not accumulate in fish.

Q. Can industry request NOAA to inspect its product?

- NOAA's Seafood Inspection Program can inspect seafood for industry. The program is fee-for-service. More information about how to request inspection is available online at: www.seafood.nmfs.noaa.gov

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Received(Date): Fri, 04 Jun 2010 09:44:44 -0400
From: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Subject: Re: Fw: BP Oil Dispersants
To: John Rapp <John.Rapp@noaa.gov>
Cc: "'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>,"'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Steve.Murawski@noaa.gov'" <Steve.Murawski@noaa.gov>,"'Steven.Wilson@noaa.gov'" <Steven.Wilson@noaa.gov>,"'Nancy.Thompson@noaa.gov'" <Nancy.Thompson@noaa.gov>,Tom Gleason <Tom.Gleason@noaa.gov>

Looking in Tom Gleason our seafood inspection attorney. Lauren

John Rapp wrote:
> All,
>
> I haven't gotten a response from folks about whether we can agree to
> 3(d) on page 2. Please let me know so we can make a decision about
> moving forward to get more dispersant directly from the manufacturer.
>
> Thanks,
> John
>
> John.Rapp@noaa.gov wrote:
>> All,
>>
>> I've been in direct discussions with Nalco about getting more
>> dispersant in the labs - especially the Seattle lab since 250 ml will
>> only go so far. The company is willing to ship the dispersant
>> directly to our labs, but there is an agreement that they've asked to
>> be signed. Their concern is that we're going to reverse engineer the
>> formula, so if a lab has already started to reverse engineer or
>> intends to reverse engineer then we likely cannot sign this agreement.
>>
>> So what I need from Steve, Usha, and Nancy is whether you've already
>> reverse engineered or intend to reverse engineer. Also, please make
>> sure that you can agree to 3(d) on page 2 of the attached. If you
>> can, then my next step is to work with Lois and Mary Glackin to
>> determine who in NOAA signs the form. The agreement binds NOAA, so
>> someone way above me does the signing.
>>
>> Please let me know ASAP about reverse engineering and 3(d).
>> Thanks,
>> John
>>
>> ----- Original Message -----
>> From: Monica Medina <Monica.Medina@noaa.gov>
>> Date: Tuesday, June 1, 2010 9:27 am
>> Subject: Re: Fw: BP Oil Dispersants
>> To: "'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>,
>> "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,
>> "'monica.medina@noaa.gov'" <Monica.Medina@noaa.gov>
>> Cc: "'KSarri@doc.gov'" <KSarri@doc.gov>, "'John.Oliver@noaa.gov'"
>> <John.Oliver@noaa.gov>, "'Steve.Murawski@noaa.gov'"
>> <Steve.Murawski@noaa.gov>, "'Steven.Wilson@noaa.gov'"
>> <Steven.Wilson@noaa.gov>, "'lauren.b.lugo@noaa.gov'"
>> <Lauren.B.Lugo@noaa.gov>, "'Nancy.Thompson@noaa.gov'"
>> <Nancy.Thompson@noaa.gov>
>>

>>
>>
>>> Hooray!!!!
>>>
>>> ----- Original Message -----
>>> From: Usha Varanasi <Usha.Varanasi@noaa.gov>
>>> To: 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>;
>>> 'monica.medina@noaa.gov' <monica.medina@noaa.gov>
>>> Cc: 'KSarri@doc.gov' <KSarri@doc.gov>; 'John.Oliver@noaa.gov'
>>> <John.Oliver@noaa.gov>; 'Steve.Murawski@noaa.gov'
>>> <Steve.Murawski@noaa.gov>; 'Steven.Wilson@noaa.gov'
>>> <Steven.Wilson@noaa.gov>; 'Lauren.B.Lugo@noaa.gov'
>>> <Lauren.B.Lugo@noaa.gov>; 'Nancy.Thompson@noaa.gov'
>>> <Nancy.Thompson@noaa.gov>
>>> Sent: Tue Jun 01 08:22:26 2010
>>> Subject: Re: Fw: BP Oil Dispersants
>>>
>>> Folks,
>>> A quick update: We have received 250 ml each of COREXT 9500 and
>>> 9527 shipped according to the chain of custody procedure.
>>> More later,
>>> Usha
>>>
>>> ----- Original Message -----
>>> From: John Rapp <John.Rapp@noaa.gov>
>>> To: Monica Medina <Monica.Medina@noaa.gov>
>>> Cc: 'KSarri@doc.gov' <KSarri@doc.gov>; 'John.Oliver@noaa.gov'
>>> <John.Oliver@noaa.gov>; 'usha.varanasi@noaa.gov'
>>> <Usha.Varanasi@noaa.gov>; 'Steve.Murawski@noaa.gov'
>>> <Steve.Murawski@noaa.gov>; 'steven.wilson@noaa.gov'
>>> <Steven.Wilson@noaa.gov>; 'lauren.b.lugo@noaa.gov'
>>> <Lauren.B.Lugo@noaa.gov>; 'nancy.thompson@noaa.gov'
>>> <Nancy.Thompson@noaa.gov>
>>> Sent: Fri May 28 17:29:16 2010
>>> Subject: Re: Fw: BP Oil Dispersants
>>>
>>> As an update on getting dispersants directly from Nalco, they've asked
>>> that I sign a non-disclosure form. Lois recommended that I get the
>>> form
>>> so she can review prior to me signing. Before Nalco will share the
>>> form, they want a full list of all the ways we intend to use COREXIT.
>>> So, I'm going back and forth with Nalco trying to get the form
>>> immediately while the seafood safety folks ensure the list encompasses
>>> all their needs.
>>>
>>> Stay tuned,
>>> John
>>>
>>> Monica Medina wrote:
>>> > Pls distribute as needed
>>> >
>>> > ----- Original Message -----
>>> > From: Beth Dieveney <Beth.Dieveney@noaa.gov>
>>> > To: DWH leadership <DWH.Leadership@noaa.gov>
>>> > Sent: Fri May 28 15:15:33 2010
>>> > Subject: BP Oil Dispersants
>>> >
>>> > Information on Dispersant make-up.

>>> >
>>> >
>>> > --
>>> > Beth Dieveney
>>> > NOAA Program Coordination Office
>>> > Office of the Under Secretary
>>> > 14th & Constitution Ave., NW, Room 5811
>>> > Washington, DC 20230
>>> >
>>> > phone: B6 Privacy
>>> > cell: B6 Privacy
>>> > fax: B6 Privacy
>>> >
>>> >

--
Lauren B. Lugo
NOAA Fisheries Service
Seafood Inspection Program
B6 Privacy
fax: B6 Privacy

Received(Date): Fri, 04 Jun 2010 10:35:47 -0400
From: Tom Gleason <Tom.Gleason@noaa.gov>
Subject: Re: Fw: BP Oil Dispersants
To: John Rapp <John.Rapp@noaa.gov>
Cc: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>,"'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>,"'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Steve.Murawski@noaa.gov'" <Steve.Murawski@noaa.gov>,"'Steven.Wilson@noaa.gov'" <Steven.Wilson@noaa.gov>,"'Nancy.Thompson@noaa.gov'" <Nancy.Thompson@noaa.gov>

John,

I haven't seen the form, but I won't argue with my boss' interpretation of the language. I think the question of whether we need to reverse engineer the formula would best be answered by Usha, Nancy and Steve M. Last week I worked with Jamon Bollock, NOAA GC, on a non-disclosure agreement with EPA that would allow NOAA to obtain the corexit formula from EPA. Assuming we can or did obtain the formula from EPA, we would not need to reverse engineer the product, and could sign an agreement with Nalco to that effect.
Steve M. - did we get the formula from EPA?

Tom

John Rapp wrote:
> Tom,
>
> Lois Schiffer reviewed the form and 3(d) is what she wanted to make
> sure folks can live with. Her interpretation of it was that we can't
> reverse engineer the formula, so she wanted assurance that it wasn't
> done nor will it be done.
>
> John
>
> Lauren.B.Lugo wrote:
>> Looking in Tom Gleason our seafood inspection attorney. Lauren
>>
>> John Rapp wrote:
>>> All,
>>>
>>> I haven't gotten a response from folks about whether we can agree to
>>> 3(d) on page 2. Please let me know so we can make a decision about
>>> moving forward to get more dispersant directly from the manufacturer.
>>>
>>> Thanks,
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>>>> already reverse engineered or intend to reverse engineer. Also,
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>>>> To: "'Usha.Varanasi@noaa.gov'" <Usha.Varanasi@noaa.gov>,
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>>>> "'monica.medina@noaa.gov'" <Monica.Medina@noaa.gov>
>>>> Cc: "'KSarri@doc.gov'" <KSarri@doc.gov>, "'John.Oliver@noaa.gov'"
>>>> <John.Oliver@noaa.gov>, "'Steve.Murawski@noaa.gov'"
>>>> <Steve.Murawski@noaa.gov>, "'Steven.Wilson@noaa.gov'"
>>>> <Steven.Wilson@noaa.gov>, "'lauren.b.lugo@noaa.gov'"
>>>> <Lauren.B.Lugo@noaa.gov>, "'Nancy.Thompson@noaa.gov'"
>>>> <Nancy.Thompson@noaa.gov>
>>>>
>>>>
>>>>
>>>>> Hooray!!!!
>>>>>
>>>>> ----- Original Message -----
>>>>> From: Usha Varanasi <Usha.Varanasi@noaa.gov>
>>>>> To: 'John.Rapp@noaa.gov' <John.Rapp@noaa.gov>;
>>>>> 'monica.medina@noaa.gov' <monica.medina@noaa.gov>
>>>>> Cc: 'KSarri@doc.gov' <KSarri@doc.gov>; 'John.Oliver@noaa.gov'
>>>>> <John.Oliver@noaa.gov>; 'Steve.Murawski@noaa.gov'
>>>>> <Steve.Murawski@noaa.gov>; 'Steven.Wilson@noaa.gov'
>>>>> <Steven.Wilson@noaa.gov>; 'Lauren.B.Lugo@noaa.gov'
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>>>>> <Nancy.Thompson@noaa.gov>
>>>>> Sent: Tue Jun 01 08:22:26 2010
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>>>>> Cc: 'KSarri@doc.gov' <KSarri@doc.gov>; 'John.Oliver@noaa.gov'
>>>>> <John.Oliver@noaa.gov>; 'usha.varanasi@noaa.gov'
>>>>> <Usha.Varanasi@noaa.gov>; 'Steve.Murawski@noaa.gov'
>>>>> <Steve.Murawski@noaa.gov>; 'steven.wilson@noaa.gov'
>>>>> <Steven.Wilson@noaa.gov>; 'lauren.b.lugo@noaa.gov'
>>>>> <Lauren.B.Lugo@noaa.gov>; 'nancy.thompson@noaa.gov'

>>>>> <Nancy.Thompson@noaa.gov>
>>>>> Sent: Fri May 28 17:29:16 2010
>>>>> Subject: Re: Fw: BP Oil Dispersants
>>>>>
>>>>> As an update on getting dispersants directly from Nalco, they've
>>>>> asked
>>>>> that I sign a non-disclosure form. Lois recommended that I get
>>>>> the form
>>>>> so she can review prior to me signing. Before Nalco will share the
>>>>> form, they want a full list of all the ways we intend to use
>>>>> COREXIT.
>>>>> So, I'm going back and forth with Nalco trying to get the form
>>>>> immediately while the seafood safety folks ensure the list
>>>>> encompasses
>>>>> all their needs.
>>>>>
>>>>> Stay tuned,
>>>>> John
>>>>>
>>>>> Monica Medina wrote:
>>>>> > Pls distribute as needed
>>>>> >
>>>>> > ----- Original Message -----
>>>>> > From: Beth Dieveney <Beth.Dieveney@noaa.gov>
>>>>> > To: DWH leadership <DWH.Leadership@noaa.gov>
>>>>> > Sent: Fri May 28 15:15:33 2010
>>>>> > Subject: BP Oil Dispersants
>>>>> >
>>>>> > Information on Dispersant make-up.
>>>>> >
>>>>> >
>>>>> > --
>>>>> > Beth Dieveney
>>>>> > NOAA Program Coordination Office
>>>>> > Office of the Under Secretary
>>>>> > 14th & Constitution Ave., NW, Room 5811
>>>>> > Washington, DC 20230
>>>>> >
>>>>> > phone: B6 Privacy
>>>>> > cell: B6 Privacy
>>>>> > fax: B6 Privacy
>>>>> >
>>>>> >
>>

Received(Date): Fri, 04 Jun 2010 13:13:13 -0400
From: John Rapp <John.Rapp@noaa.gov>
Subject: Seafood safety tp's
To: "Sarri, Kristen" <KSarri@doc.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Kris,

Here are two points I think will address seafood safety at a 30K foot level...

- The U.S. Government is playing an active role in ensuring the safety of seafood harvested from federal and state waters. As part of those duties, we have established and are implementing a comprehensive, coordinated, multi-agency program to ensure that seafood from the Gulf of Mexico is safe to eat. This is important not only for consumers who need to know their food is safe but also for fishermen, who need to be able to sell their products with confidence.
- NOAA has designed a multi-pronged approach to ensure that seafood harvested from the Gulf of Mexico is not contaminated by oil. The steps include:
  - Closures
  - Surveillance and monitoring in the vicinity of closed areas
  - Dockside sampling, and
  - a protocol for re-opening areas closed to fishing

Received(Date): Fri, 04 Jun 2010 18:59:57 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: Re: Fw: JAG
To: Paul Sandifer <Paul.Sandifer@noaa.gov>
Cc: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Joint Analysis Group.doc

HI Paul,
I've attached the proposal on the JAG that Steve put together. Per Steve and Bob, Sam Walker is leading this, which is working well.
Thanks,
Shelby

Paul Sandifer wrote:
> Since Beth is away, can someone respond re this info request from OSTP?
> Thanks
> Sent from my Blackberry. Pls excuse brevity.
>
> ----- Original Message -----
> From: Paul Sandifer
> To: 'Beth.Dieveney@noaa.gov' <Beth.Dieveney@noaa.gov>
> Sent: Fri Jun 04 15:34:18 2010
> Subject: JAG
>
> Beth;
> Just rec'd phone message from Kate Moran at OSTP with request for info on the JAG, specifically who is leading. OSTP has suggestion for involvement of a disaster subcommittee under NSTC. Can you send her (and me) the info or just send to me and I will forward.
> Thanks
> Paul
> Sent from my Blackberry. Pls excuse brevity.
>

Proposal for the Establishment of a Joint Analysis Group (JAG)
For Surface and Sub-Surface Oceanography, Oil and Dispersant Data

This proposal sets up a joint working group among NOAA, EPA and USGS to analyze an evolving database of sub-surface oceanographic data being derived from the coordinated sampling efforts of vessels contracted for or owned by BP, NOAA and academic scientists.

Goal: Provide most comprehensive (to-date) characterization of the Sub-surface and transport to inform:

1. The command for informational needs;
2. The modeling teams; and
3. responders/mission planning for tactical decisions.

The JAG will develop a consistent set of data standards and an electronic database from which the analytical team can draw information on depth, salinity, temperature, oxygen, fluorescence and oil concentration data, as well as other oceanographic parameters. It will interface with ("lash-up" to) the Response Deep Water Monitoring Branch at the IC.

The team will develop data visualization products and analyses that characterize:

(1) The distribution of sampling carried out to date including both stations made good and proposed stations in ongoing sampling
(2) The distribution in three dimensions of especially oxygen and oil/dispersants at depth in relation to the well head
(3) Summary products that define average readings and likely plume distributions upon which to plan additional sampling missions

Team members will report preliminary results by COB June 2 to the extent practicable, but work on an ongoing basis to provide and inform the Unified Command and leadership of progress in plume mapping

The Team will consist of:

NOAA: Sam Walker, Russ Beard, Scott Cross, Robert Pavia, Benjamin Shorr, Rik Wanninkhof, Debbie Payton

ASA Science: Lauren Decker,

Rees Madsen

BP Scientists: Micah Reasnor

EPA Scientists: Dan Wainberg, Al Venosa

USGS Scientists - Mark_Sogge@usgs.gov

and other agencies by request

Agree to work virtually for now. Deadline of 2 June to have initial findings report. Deadline has some flexibility so that we can maintain integrity of process and results.

Key data sets to integrate (beyond CTD): LISST, chemical analysis, other sensors

Three main actions in the near term:

1. Assemble data into visualization environment
2. Review by subject matter experts to characterize
3. Short report to UC SSC

Received(Date): Sun, 06 Jun 2010 15:54:57 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: DOI Fish and Wildlife report
To: John Rapp <John.Rapp@noaa.gov>
Cc: John Oliver <John.Oliver@noaa.gov>, Samuel Rauch <Samuel.Rauch@noaa.gov>,Eric Schwaab <Eric.Schwaab@noaa.gov>, Deb Lambert <Deb.Lambert@noaa.gov>,Rebecca Chiampi <Rebecca.Chiampi@noaa.gov>,Beth Lumsden <Beth.Lumsden@noaa.gov>

please see what I sent in last night on this attached as well

John Rapp wrote:
> Hey guys,
>
> Can you give this document a quick review? Rebecca is reviewing the
> PDF to see if it matches up with what DOI produced or whether we need
> changes. On this document, please pay particular attention to the
> opening paragraph.
>
> Maybe a 30 minuite turn-around (if possible).
>
> Thanks,
> John

Impacts on Marine Wildlife





Impacts on Marine Wildlife

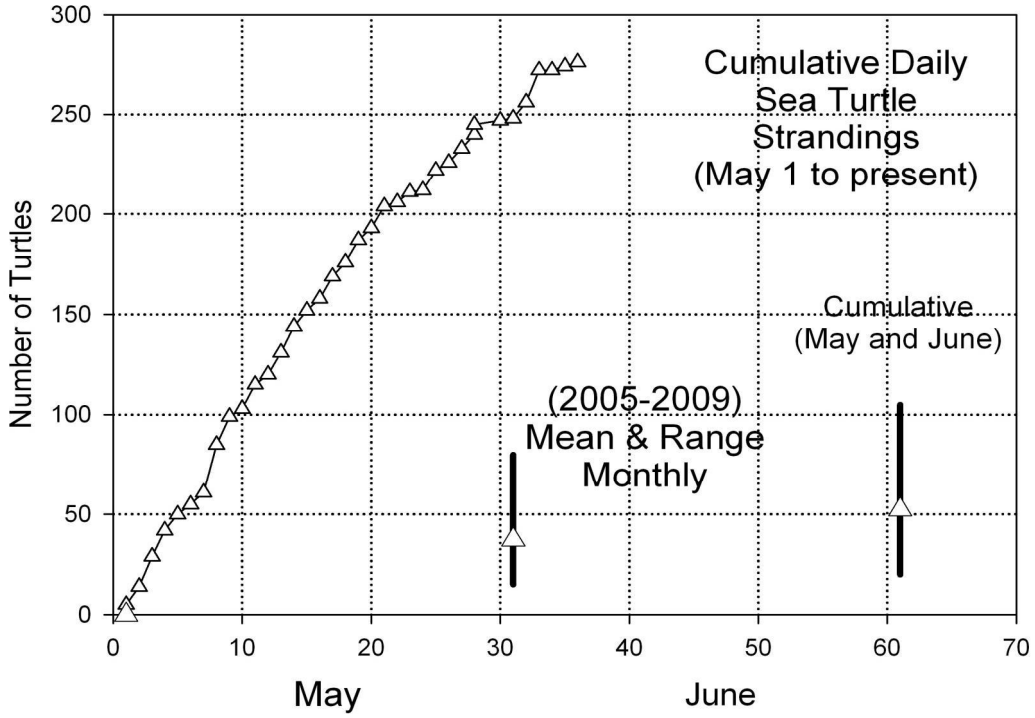


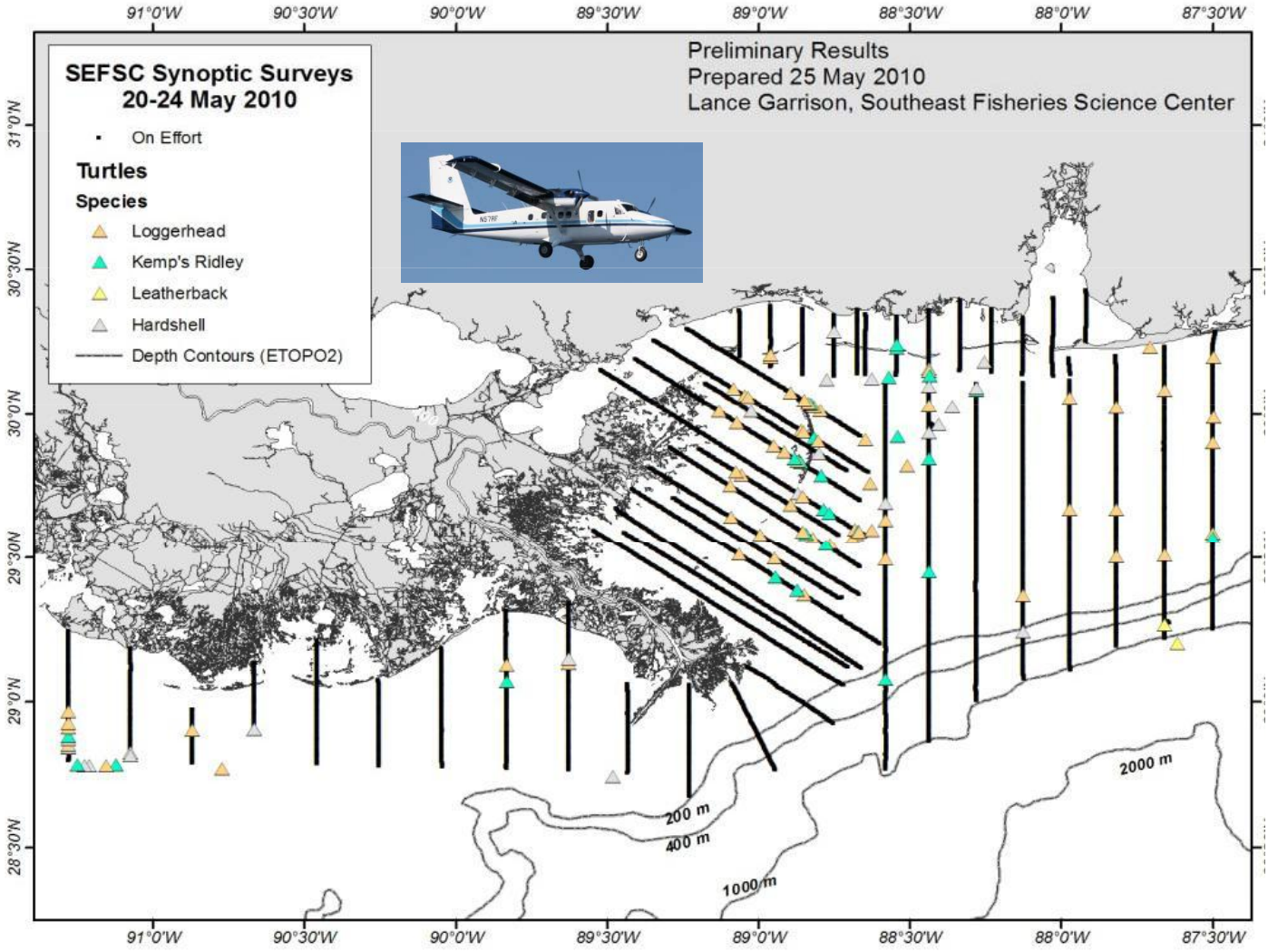


NOAA Mandates for Marine Resource Management

- Fisheries management through the Magnuson Stevens Fisheries Conservation and management Reauthorization Act of 2007
- Includes authority to regulate deep corals
- Authority for Sea Turtles under the Endangered Species Act (5 species in the region: green, leatherback, hawksbill, loggerhead, and Kemp's ridley
- Marine Mammal Protection Act, gives NOAA responsibility for managing all of the Gulf's marine mammals except manitee

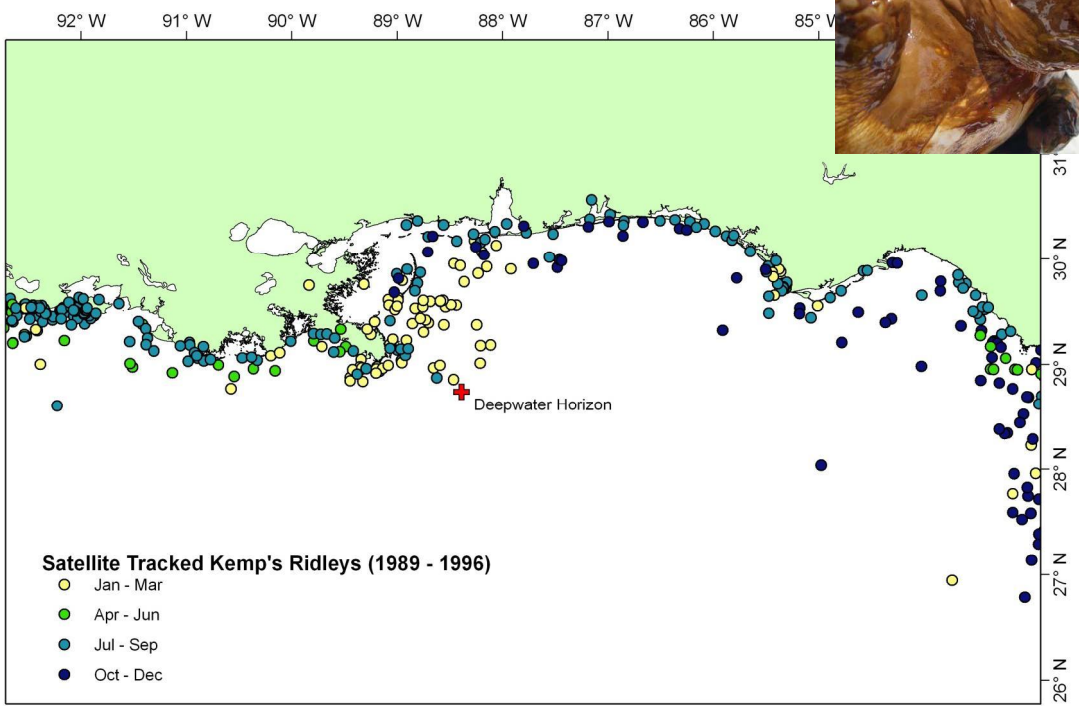
Major Anomaly for Turtles




SEFSC Synoptic Surveys
20-24 May 2010
On Effort
Turtles
Species
Loggerhead
Kemp's Ridley
Leatherback
Hardshell
Depth Contours (ETOPO2)
Preliminary Results
Prepared 25 May 2010
Lance Garrison, Southeast Fisheries Science Center
91°0'W
90°30'W
90°0'W
89°30'W
89°0'W
88°30'W
88°0'W
87°30'W
31°0'N
30°30'N
30°0'N
29°30'N
29°0'N
28°30'N
200 m
400 m
1000 m
2000 m

Fear (for) the turtle….





NOAA FISHERIES SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

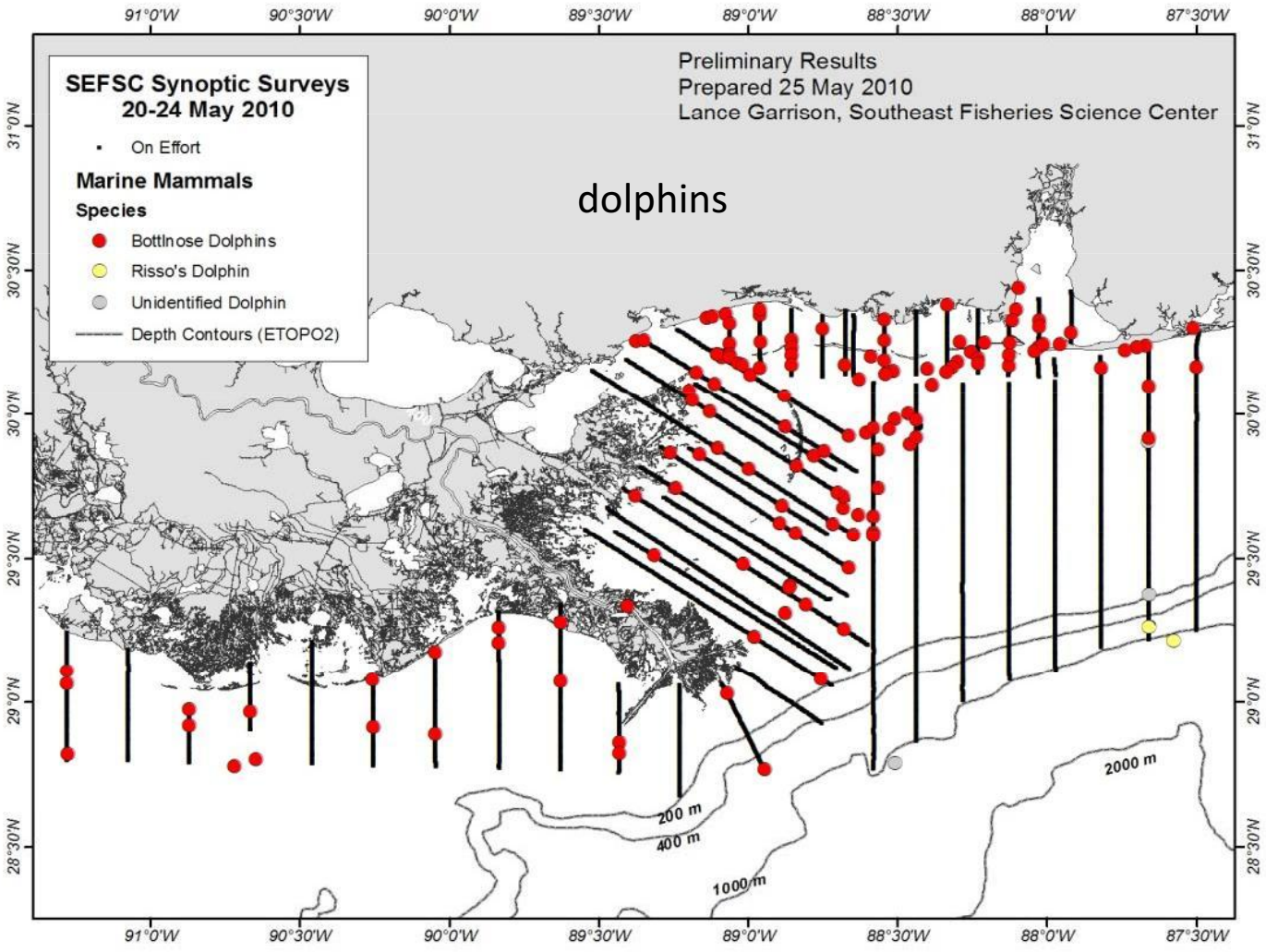
National Marine Fisheries Service
Galveston Laboratory
Galveston, TX

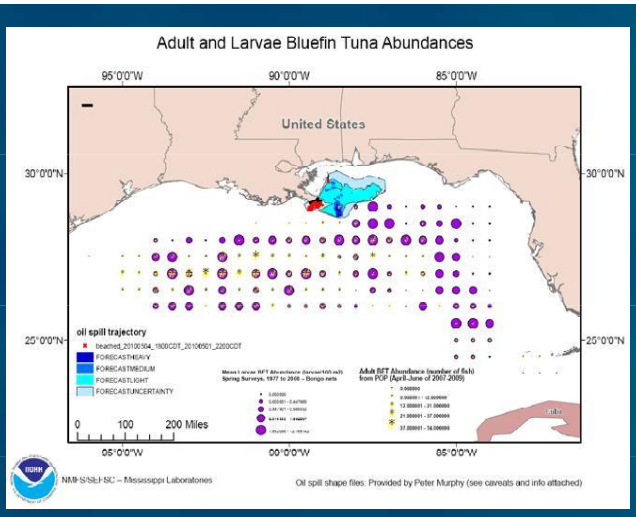
The Gulf of Mexico is a critical nesting and nursery area for sea turtles

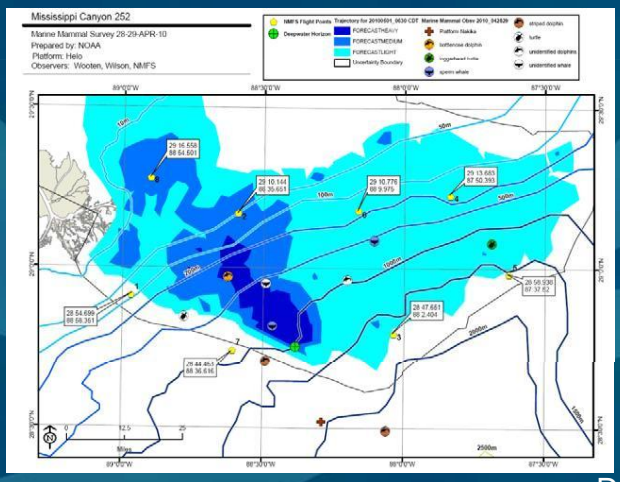
- the Gulf of Mexico is particularly important for the Kemp's ridley. They only nest in the Gulf (on nesting beaches in Mexico and Texas) and we have worked very hard with our colleagues in Mexico to implement substantial protections
- The waters with the current oil plume represent critical ocean habitat for these animals both for foraging as well those migrating to nesting beaches
- Gulf ecosystem is one of the most important ecosystems in the country, if not in the world, for all these sea turtle species.

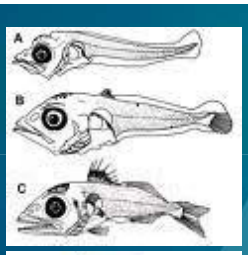
Tail of the Turtle….

- Response to and rescue of as many impacted animals as possible, along with collecting the necessary documentation will allow us to fully understand the population-level impact of the spill on these species are critical. Even when no oil is spilling into the Gulf, the reduction in these sea turtle populations means that we will need to re-double our recovery efforts in order to adequately conserve and recover these species.
- all Federal agencies must do their part to set a good example by considering sea turtle conservation as they carryout or permit their activities. If the will is there, we can conserve and recover these species and having the support from President will go along way to improve sea turtle recovery


SEFSC Synoptic Surveys
20-24 May 2010
On Effort
Marine Mammals
Species
Bottlnose Dolphins
Risso's Dolphin
Unidentified Dolphin
Depth Contours (ETOPO2)
Preliminary Results
Prepared 25 May 2010
Lance Garrison, Southeast Fisheries Science Center
dolphins
91°0'W
90°30'W
90°0'W
89°30'W
89°0'W
88°30'W
88°0'W
87°30'W
31°0'N
30°30'N
30°0'N
29°30'N
29°0'N
28°30'N
200 m
400 m
1000 m
2000 m













Deep water giant squid

· What living resources are potentially at risk from the oil and use of dispersants and their synergy?

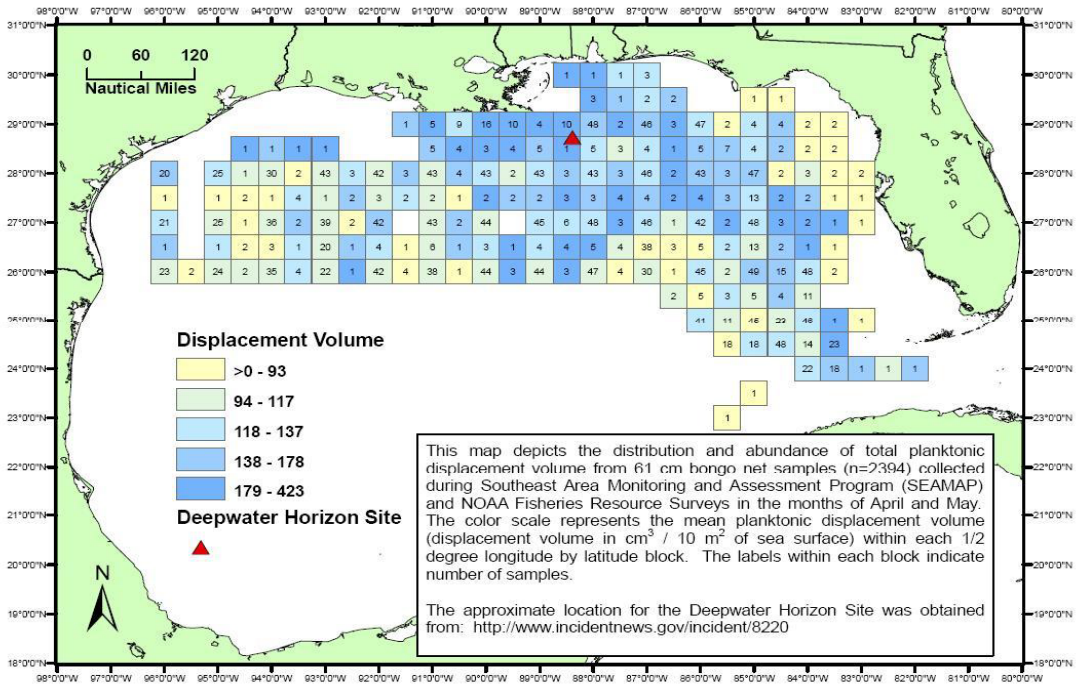
· BFT spawning in the region offshore from the spill from April-June – NOAA FSV GORDON GUNTER cruise completed

· Samples of sperm whale tissue and squids available from cruise last summer and winter as baselines

· Overflights continue to monitor protected species

We have excellent baselines to judge the long term impacts on planktonic communities of oil and dispersants

Distribution and abundance of total planktonic displacement volume from bongo net samples collected during April and May (1982 to 2008)



NOAA Fisheries Service
Southeast Fisheries Science Center
Mississippi Laboratories

Over 800,000 gallons of dispersants used surface & subsurface
Are there tipping points in the ecosystem?, for species?



We Need a more Holistic Ecosystem Approach to Understanding Long-Term Impacts of MC-252



Document ID: 0.7.19.987.1

Received(Date): Mon, 07 Jun 2010 15:07:33 -0400
From: Jason Rolfe <Jason.Rolfe@noaa.gov>
Subject: Revision - NIC Report Out - 7 June
To: "Mark.W.Miller" <Mark.W.Miller@noaa.gov>,Bill Conner <William.Conner@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Timothy Gallagher <timothy.gallagher@noaa.gov>,Richard R Wingrove <Richard.R.Wingrove@noaa.gov>,Nathalie Valette-Silver <Nathalie.Valette-Silver@noaa.gov>,Ralph Lopez <Ralph.Lopez@noaa.gov>,Michelle A Johnston <Michelle.A.Johnston@noaa.gov>,John Wagner <John.Wagner@noaa.gov>

I meant to include the bottom bullet on last send. Please use this version.

Thank you,
Jason

ADM Allen has approved the Joint Analysis Group (JAG) as a new scientific group under the NIC IASG. Their task is to provide comprehensive characterization of the surface and sub-surface oceanography, oil and dispersant data derived from the coordinated sampling efforts of vessels contracted or owned by BP, NOAA and academic scientists. This group needs to coordinate with the NIC-IASG Subsurface Dispersed Oil Group (SDOG) that was tasked about two weeks ago with a similar mission. The NIC-IASG/SDOG has requested the formal integration of the 2 groups to insure efficient communication/collaboration.

ERMA map products continue to gain high visibility – ERMA team here continues to provide ERMA displays for the NIC situation unit briefings as well as provide demonstrations for visiting VIPs. They are also producing map products for DHS, USCG leaders and the White House. All products and services from the ERMA team here met with great praise and interest for continued support at NIC Situation Unit.

NRT call to shift to a Mon, Wed, Friday at 1100 EDT schedule, effective 9 June. No NRT call on 8 June. NIC IASG to participate more in the NRT calls. There is an attempt to revert the NRT call back to more of a working call. The IASG will provide relevant topics for the NRT agenda (due to CAPT Lloyd 1400 prior day). The NIC IASG will provide 5 minutes of IASG issues summary and 5 minutes providing a feature issue update.

Petrobras has generously offered to delay delivery of the R/V *Seward Johnson* to Brazil so that the ship is available to work on the DWH oil spill. A letter has been sent to Petrobras confirming the delay for circa 120 days, so please consider the *Seward Johnson* in the list of available assets. Shirley Pomponi and Pete Tatro at Harbor Branch are the points of contact for the ship. The per-day rate is less than when the ship was a member of the UNOLS fleet, somewhere in the mid-to-low $20sK.

Received(Date): Mon, 07 Jun 2010 15:58:58 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: DRAFT Weatherbird press release
To: Justin Kenney <Justin.kenney@noaa.gov>
Cc: "Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"DEEPWATER Leadership (dwh.leadership@noaa.gov)" <DWH.Leadership@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, "Sarri, Kristen" <KSarri@doc.gov>
Attachment

looks good.....

Justin Kenney wrote:
> Hello folks, below is a DRAFT press release for tomorrow's
> announcement of the Weatherbird data. Drs. Lubchenco and Murawski
> weighed in already, and I would like to give everyone a chance to see
> the direction we are headed. Comments please, and soon.
>
>
>
> Many thanks,
>
>
>
> Justin Kenney
>
> NOAA Director of Communications & External Affairs
>
> Office: 202-482-6090
>
> Cell: 202-821-6310
>
> Email: justin.kenney@noaa.gov
>
> **
>
> http://www.noaa.gov/socialmedia/
>
>
>
>
>
> *NOAA Completes Initial Analysis of /Weatherbird II/ Water Samples *
>
> /Research part of larger effort to solve 3-dimensional puzzle of where
> the BP oil is sub-surface /
>
> / /
>
> NOAA's independent analysis of some water samples provided from the
> May 22-28 research mission of the University of South Florida's R/V
> /Weatherbird II/ confirmed the presence of very low concentrations of
> sub-surface oil and PAHs (polycyclic aromatic hydrocarbons, which
> include carcinogens such as benzoapyrene) at sampling depths ranging
> from 50 meters to 1000 meters. The /Weatherbird/ samples came from
> three stations: 40 and 45 nautical miles to the northeast of the well
> head and 142 nautical miles southeast of the well head (see chart).
> NOAA's analysis of the presence of subsurface oil determined that the

> concentration of oil is in the range of less than 0.5 parts per
> million, and PAH levels in range of parts per trillion. NOAA announced
> its analysis in conjunction with the University of South Florida from
> its campus in St. Petersburg, Florida.
>
>
>
> "We have always known there is oil under the surface; the questions we
> are exploring are where is it, in what concentrations, where is it
> going, and what are the consequences for the health of the marine
> environment?" said NOAA Administrator Dr. Jane Lubchenco. "This
> research from the University of South Florida contributes to the
> larger, three-dimensional puzzle we are trying to solve, in
> partnership with academic and NOAA scientists."
>
>
>
> Other NOAA research missions that are fitting complimentary pieces of
> the 3-D puzzle include the NOAA Ship /Thomas Jefferson/, a 208-foot
> survey vessel, which is currently underway on a mission in the
> vicinity of the BP Deepwater Horizon oil spill. Researchers are taking
> water samples and testing advanced methods for detecting submerged oil
> while gathering oceanographic data in the area's coastal waters. The
> NOAA Ship /Gordon Gunter/, a 224-foot research vessel, returned June 3
> from an eight-day oil detection mission in the vicinity of the BP
> Deepwater Horizon well head. During the effort, researchers collected
> water samples, conducted plankton tows, and employed echo sounders,
> autonomous underwater vehicles and other technologies to collect
> subsurface data. In addition, NOAA's P-3 "Hurricane Hunter" is
> deploying instruments to better track the movement of the Loop
> Current, and therefore improve our understanding of where the oil is
> moving at the surface and below the surface.
>
>
>
> Along with its analysis for the presence of oil and PAHs, NOAA's
> analysis to "fingerprint" the /Weatherbird/ oil samples to the
> BP/Mississippi Canyon 252 (MC-252) source concluded that:
>
> · Oil found in surface samples taken at the "Slick 1" source
> were consistent with the MC252 source,
>
> · Oil found in samples taken from Station 01, 142 nautical
> miles southeast of the well head, at 100 meters and 300 meters were
> not consistent with the MC252 source.
>
> · Trace oil found in samples from Station 07 at the surface,
> at 50 meters and at 400 meters are in concentrations too low to
> confirm the source, and
>
> · [Still awaiting results for the final bullet.]
>
>
>
> In general, NOAA's analysis of the /Weatherbird/ samples shows that
> concentrations of hydrocarbons decrease with depth, with a notable
> exception of samples at 300 meters from Station 07, which warrants
> additional research attention. [Bob and Steve, I need a "so what"

> sentence here about this finding. Also, PAH levels are very low in all
> samples, with only five of 25 having reportable concentrations of the
> priority pollutant PAHs.
>
>
>

---

looks good.....

Justin Kenney wrote:

> Hello folks, below is a DRAFT press release for tomorrow's announcement of the Weatherbird data. Drs. Lubchenco and Murawski weighed in already, and I would like to give everyone a chance to see the direction we are headed. Comments please, and soon.
>
> Many thanks,
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> Justin Kenney
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> NOAA Director of Communications & External Affairs
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> Office: 202-482-6090
>
> Cell: 202-821-6310
>
> Email: justin.kenney@noaa.gov



http://www.noaa.gov/socialmedia/

NOAA Completes Initial Analysis of *Weatherbird II* Water Samples

Research part of larger effort to solve 3-dimensional puzzle of where the BP oil is sub-surface

NOAA's independent analysis of some water samples provided from the May 22-28 research mission of the University of South Florida's R/V *Weatherbird II* confirmed the presence of very low concentrations of sub-surface oil and PAHs (polycyclic aromatic hydrocarbons, which include carcinogens such as benzoapyrene) at sampling depths ranging from 50 meters to 1000 meters. The *Weatherbird* samples came from three stations: 40 and 45 nautical miles to the northeast of the well head and 142 nautical miles southeast of the well head (see chart). NOAA's analysis of the presence of subsurface oil determined that the concentration of oil is in the range of less than 0.5 parts per million, and PAH levels in range of parts per trillion. NOAA announced its analysis in conjunction with the University of South Florida from its campus in St. Petersburg, Florida.

"We have always known there is oil under the surface; the questions we are exploring are where is it, in what concentrations, where is it going, and what are the consequences for the health of the marine environment?" said NOAA Administrator Dr. Jane Lubchenco. "This research from the University of South Florida contributes to the larger, three-dimensional puzzle we are trying to solve, in partnership with academic and NOAA scientists."

Other NOAA research missions that are fitting complimentary pieces of the 3-D puzzle include the NOAA Ship *Thomas Jefferson*, a 208-foot survey vessel, which is currently underway on a mission in the vicinity of the BP Deepwater Horizon oil spill. Researchers are taking water samples and testing advanced methods for detecting submerged oil while gathering oceanographic data in the area's coastal waters. The NOAA Ship *Gordon Gunter*, a 224-foot research vessel, returned June 3 from an eight-day oil detection mission in the vicinity of the BP Deepwater Horizon well head. During the effort, researchers collected water samples, conducted plankton tows, and employed echo sounders, autonomous underwater vehicles and other technologies to collect subsurface data. In addition, NOAA's P-3 "Hurricane Hunter" is deploying instruments to better track the movement of the Loop Current, and therefore improve our understanding of where the oil is moving at the surface and below the surface.

Document ID: 0.7.19.1350

Along with its analysis for the presence of oil and PAHs, NOAA's analysis to "fingerprint" the *Weatherbird* oil samples to the BP/Mississippi Canyon 252 (MC-252) source concluded that:

· Oil found in surface samples taken at the "Slick 1" source were consistent with the MC252 source,

· Oil found in samples taken from Station 01, 142 nautical miles southeast of the well head, at 100 meters and 300 meters were not consistent with the MC252 source.

· Trace oil found in samples from Station 07 at the surface, at 50 meters and at 400 meters are in concentrations too low to confirm the source, and

· [Still awaiting results for the final bullet.]

In general, NOAA's analysis of the *Weatherbird* samples shows that concentrations of hydrocarbons decrease with depth, with a notable exception of samples at 300 meters from Station 07, which warrants additional research attention. [Bob and Steve, I need a "so what" sentence here about this finding. Also, PAH levels are very low in all samples, with only five of 25 having reportable concentrations of the priority pollutant PAHs.


STAY CONNECTED
YouTube

Received(Date): Mon, 07 Jun 2010 16:41:10 -0400
From: "Gilson, Shannon" <SGilson@doc.gov>
Subject: NYT:(ON DEADLINE) Fisheries follow ups
To: "Rauch, Samuel" <Samuel.Rauch@noaa.gov>,"Spring, Margaret" <Margaret.Spring@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>,"Schwaab, Eric" <Eric.Schwaab@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>,"Schiffer, Lois" <Lois.Schiffer@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Montanio, Pat" <Pat.Montanio@noaa.gov>,"Pawlak, Brian" <Brian.T.Pawlak@noaa.gov>,"Croom, Miles" <Miles.Croom@noaa.gov>,"Kenney, Justin" <Justin.kenney@noaa.gov>,"Smullen, Scott" <Scott.Smullen@noaa.gov>,"Lambert, Deb" <Deb.Lambert@noaa.gov>,"Crabtree, Roy" <Roy.Crabtree@noaa.gov>,"Dieveney, Beth" <Beth.Dieveney@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

Questions from the reporter. Need answers ASAP,

Should NOAA have taken seasonality into account in the Gulf, like it does in Alaska?

I've been told by several marine biologists that near the deepwater wellhead is a spawning ground for bluefin tuna. Is this the case and why wasn't it taken into account?

Was an analysis done on the impact of dispersants on salmon habitats in the Pacific Northwest? If yes, why wasn't dispersants impact study done in the Gulf?

Why are there categorical exclusions in the NEPA process? **(is this a DOI issue???)** If there weren't categorical exclusions, wouldn't NOAA have done an environmental analysis before drilling in Deepwater began?

Do we have baseline studies of big fish?

From: Samuel Rauch [mailto:Samuel.Rauch@noaa.gov]
Sent: Monday, June 07, 2010 1:20 PM
To: Gilson, Shannon; Spring, Margaret; Medina, Monica; Schwaab, Eric; Oliver, John; Schiffer, Lois; Rapp, John; Montanio, Pat; Pawlak, Brian; Croom, Miles; Kenney, Justin; Smullen, Scott; Lambert, Deb; Crabtree, Roy; Dieveney, Beth; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: [Fwd: EFH Consultation Document]

-------- Original Message --------

Subject: EFH Consultation Document
Date: Mon, 07 Jun 2010 13:07:11 -0400
From: David Dale <David.Dale@noaa.gov>
To: Samuel Rauch <Samuel.Rauch@noaa.gov>
CC: Brian T Pawlak <Brian.T.Pawlak@noaa.gov>

Sam, Attached are two pieces of correspondence dated in December 2006 regarding Essential Fish Habitat Consultations with MMS. The December 13, 2006 letter amends the 1999 Programmatic Consultation to include eastward expansion of the Central Planning Area. The December 21, 2006 letter is comments in response to the DEIS for the 2007-2012 leasing program and references the above letter. Both of these reference the 1999 Programmatic EFH Consultation which I can provide if necessary. Thanks,David -- David Dale, Fishery BiologistHabitat Conservation Division National Marine Fisheries ServiceSoutheast Regional Office263 13th Avenue SouthSt. Petersburg, Florida 33701-5505 W: 727-551-5736F: 727-824-5300

Received(Date): Mon, 07 Jun 2010 17:12:43 -0400
From: Samuel Rauch <Samuel.Rauch@noaa.gov>
Subject: Re: NYT:(ON DEADLINE) Fisheries follow ups
To: "Gilson, Shannon" <SGilson@doc.gov>
Cc: "Spring, Margaret" <Margaret.Spring@noaa.gov>,"Medina, Monica" <Monica.Medina@noaa.gov>,"Schwaab, Eric" <Eric.Schwaab@noaa.gov>,"Oliver, John" <John.Oliver@noaa.gov>,"Schiffer, Lois" <Lois.Schiffer@noaa.gov>, "Rapp, John" <John.Rapp@noaa.gov>,"Montanio, Pat" <Pat.Montanio@noaa.gov>,"Pawlak, Brian" <Brian.T.Pawlak@noaa.gov>,"Croom, Miles" <Miles.Croom@noaa.gov>,"Kenney, Justin" <Justin.kenney@noaa.gov>,"Smullen, Scott" <Scott.Smullen@noaa.gov>,"Lambert, Deb" <Deb.Lambert@noaa.gov>,"Crabtree, Roy" <Roy.Crabtree@noaa.gov>,"Dieveney, Beth" <Beth.Dieveney@noaa.gov>,"Deepwater NOAA Support (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>

My initial reactions to these questions:
1) Seasonality - In Alaska, they can only do exploration and other activities during certain seasons when it is ice free. Therefore seasonality is extremely important there. It is not as important in the Gulf when operations can occur year round.

2) Bluefin tuna spawn near the surface not near the bottom and it occurs over a wide swath of the Gulf. Absent an oil spill, I am not sure that a bluefin tuna spawning a mile above the well would be affected by the well. I do not know what effect an operational terminal would have had on the tuna spawning.

3) I do not know the answer to the question about NW Salmon habitat but I imagine there could be a significant difference in the use of a dispersant in the ocean where it is diluted quite quickly and the use in a riverine habitat like the Pacific NW where it may not be diluted. Regardless, the question of what environmental reviews should be done before use of dispersants are authorized is best addressed by EPA, MMS and the Coast Guard.

4) NEPA questions should be addressed to MMS or to CEQ (as to why categorical exclusions exist at all). The existence of a categorical exclusion under NEPA did not make any difference in terms of our analysis. The consulted with us programmatically rather than individually. At the time, we thought that was an appropriate thing to do for EFH purposes.

5) we do have baseline studies of big fish. I will send you something on baselines separately.

Gilson, Shannon wrote:

> Questions from the reporter. Need answers ASAP,
>
> Should NOAA have taken seasonality into account in the Gulf, like it does in Alaska?
>
> I've been told by several marine biologists that near the deepwater wellhead is a spawning ground for bluefin tuna. Is this the case and why wasn't it taken into account?

Was an analysis done on the impact of dispersants on salmon habitats in the Pacific Northwest? If yes, why wasn't dispersants impact study done in the Gulf?

Why are there categorical exclusions in the NEPA process? **(is this a DOI issue???)** If there weren't categorical exclusions, wouldn't NOAA have done an environmental analysis before drilling in Deepwater began?

Do we have baseline studies of big fish?

From: Samuel Rauch [mailto:Samuel.Rauch@noaa.gov]
Sent: Monday, June 07, 2010 1:20 PM
To: Gilson, Shannon; Spring, Margaret; Medina, Monica; Schwaab, Eric; Oliver, John; Schiffer, Lois; Rapp, John; Montanio, Pat; Pawlak, Brian; Croom, Miles; Kenney, Justin; Smullen, Scott; Lambert, Deb; Crabtree, Roy; Dieveney, Beth; Deepwater NOAA Support (dwh.staff@noaa.gov)
Subject: [Fwd: EFH Consultation Document]

-------- Original Message --------

Subject:	EFH Consultation Document
Date:	Mon, 07 Jun 2010 13:07:11 -0400
From:	David Dale <David.Dale@noaa.gov>
To:	Samuel Rauch <Samuel.Rauch@noaa.gov>
CC:	Brian T Pawlak <Brian.T.Pawlak@noaa.gov>

Sam, Attached are two pieces of correspondence dated in December 2006 regarding Essential Fish Habitat Consultations with MMS. The December 13, 2006 letter amends the 1999 Programmatic Consultation to include eastward expansion of the Central Planning Area. The December 21, 2006 letter is comments in response to the DEIS for the 2007-2012 leasing program and references the above letter. Both of these reference the 1999 Programmatic EFH Consultation which I can provide if necessary. Thanks, David -- David Dale, Fishery Biologist Habitat Conservation Division National Marine Fisheries Service Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701-5505 W: 727-551-5736 F: 727-824-5300

Received(Date): Mon, 07 Jun 2010 19:47:19 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Re: DRAFT Weatherbird press release
To: Justin Kenney <Justin.kenney@noaa.gov>
Cc: "Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"DEEPWATER Leadership (dwh.leadership@noaa.gov)" <DWH.Leadership@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, "Sarri, Kristen" <KSarri@doc.gov>
Attachment

Justin,
I know Bob and Steve are working on this with you but I still think our initial sentence may be taken out of context and be a bit alarmist if we say "which include carcinogens such as benzoapyrene"
Unfortunately, people read about carcinogens and stop there.

I'm not saying we can't mention it later in the article but I would not lead with that info. I think we have to give reporters and the general public a perspective right off the bat. Should we say "NOAA's independent analysis of 25 water samples provided from the May 22-28 research mission of the University of South Florida's R/V /Weatherbird II/ showed that in 3 of the samples there were very low concentrations of sub-surface oil and PAHs (polycyclic aromatic hydrocarbons). While it may be premature to draw definitive conclusions from this initial data, 22 of 25 samples came back below the detection level and the 3 samples where oil or PAHs (polycyclic aromatic hydrocarbons) were detected the levels in these samples are below a normal threshold of concern in the parts per trillion or parts per billion. We must remember that this is just the first of our expected information in trying to determine what is happening.. etc." Then I think you can add more technical specifics later in the article.
** Also I may not have all the information in this paragraph correct as I was just going off the verbal info I heard earlier.

I think we have to answer the basic question of did this initial data show a problem or not. We know the answer is complex but I think we have to at least start the answer in simple terms with appropriate caveats.

just a thought.
Dave

Justin Kenney wrote:
>
> Hello folks, below is a DRAFT press release for tomorrow's
> announcement of the Weatherbird data. Drs. Lubchenco and Murawski
> weighed in already, and I would like to give everyone a chance to see
> the direction we are headed. Comments please, and soon.
>
>
>
> Many thanks,
>
>
>
> Justin Kenney
>
> NOAA Director of Communications & External Affairs
>
> Office: 202-482-6090

> Cell: 202-821-6310
>
> Email: justin.kenney@noaa.gov
>
> **
>
> http://www.noaa.gov/socialmedia/
>
>
>
>
>
> *NOAA Completes Initial Analysis of /Weatherbird II/ Water Samples *
>
> /Research part of larger effort to solve 3-dimensional puzzle of where
> the BP oil is sub-surface /
>
> / /
>
> NOAA's independent analysis of some water samples provided from the
> May 22-28 research mission of the University of South Florida's R/V
> /Weatherbird II/ confirmed the presence of very low concentrations of
> sub-surface oil and PAHs (polycyclic aromatic hydrocarbons, which
> include carcinogens such as benzoapyrene) at sampling depths ranging
> from 50 meters to 1000 meters. The /Weatherbird/ samples came from
> three stations: 40 and 45 nautical miles to the northeast of the well
> head and 142 nautical miles southeast of the well head (see chart).
> NOAA's analysis of the presence of subsurface oil determined that the
> concentration of oil is in the range of less than 0.5 parts per
> million, and PAH levels in range of parts per trillion. NOAA announced
> its analysis in conjunction with the University of South Florida from
> its campus in St. Petersburg, Florida.
>
>
>
> "We have always known there is oil under the surface; the questions we
> are exploring are where is it, in what concentrations, where is it
> going, and what are the consequences for the health of the marine
> environment?" said NOAA Administrator Dr. Jane Lubchenco. "This
> research from the University of South Florida contributes to the
> larger, three-dimensional puzzle we are trying to solve, in
> partnership with academic and NOAA scientists."
>
>
>
> Other NOAA research missions that are fitting complimentary pieces of
> the 3-D puzzle include the NOAA Ship /Thomas Jefferson/, a 208-foot
> survey vessel, which is currently underway on a mission in the
> vicinity of the BP Deepwater Horizon oil spill. Researchers are taking
> water samples and testing advanced methods for detecting submerged oil
> while gathering oceanographic data in the area's coastal waters. The
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> from an eight-day oil detection mission in the vicinity of the BP
> Deepwater Horizon well head. During the effort, researchers collected
> water samples, conducted plankton tows, and employed echo sounders,
> autonomous underwater vehicles and other technologies to collect
> subsurface data. In addition, NOAA's P-3 "Hurricane Hunter" is

> deploying instruments to better track the movement of the Loop
> Current, and therefore improve our understanding of where the oil is
> moving at the surface and below the surface.
>
>
>
> Along with its analysis for the presence of oil and PAHs, NOAA's
> analysis to "fingerprint" the /Weatherbird/ oil samples to the
> BP/Mississippi Canyon 252 (MC-252) source concluded that:
>
> · Oil found in surface samples taken at the "Slick 1" source
> were consistent with the MC252 source,
>
> · Oil found in samples taken from Station 01, 142 nautical
> miles southeast of the well head, at 100 meters and 300 meters were
> not consistent with the MC252 source.
>
> · Trace oil found in samples from Station 07 at the surface,
> at 50 meters and at 400 meters are in concentrations too low to
> confirm the source, and
>
> · [Still awaiting results for the final bullet.]
>
>
>
> In general, NOAA's analysis of the /Weatherbird/ samples shows that
> concentrations of hydrocarbons decrease with depth, with a notable
> exception of samples at 300 meters from Station 07, which warrants
> additional research attention. [Bob and Steve, I need a "so what"
> sentence here about this finding. Also, PAH levels are very low in all
> samples, with only five of 25 having reportable concentrations of the
> priority pollutant PAHs.
>
>
>

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> Many thanks,
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> Justin Kenney
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> NOAA Director of Communications & External Affairs
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> Office: 202-482-6090
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> Cell: 202-821-6310
>
> Email: justin.kenney@noaa.gov



http://www.noaa.gov/socialmedia/

NOAA Completes Initial Analysis of *Weatherbird II* Water Samples

Research part of larger effort to solve 3-dimensional puzzle of where the BP oil is sub-surface

NOAA's independent analysis of some water samples provided from the May 22-28 research mission of the University of South Florida's R/V *Weatherbird II* confirmed the presence of very low concentrations of sub-surface oil and PAHs (polycyclic aromatic hydrocarbons, which include carcinogens such as benzoapyrene) at sampling depths ranging from 50 meters to 1000 meters. The *Weatherbird* samples came from three stations: 40 and 45 nautical miles to the northeast of the well head and 142 nautical miles southeast of the well head (see chart). NOAA's analysis of the presence of subsurface oil determined that the concentration of oil is in the range of less than 0.5 parts per million, and PAH levels in range of parts per trillion. NOAA announced its analysis in conjunction with the University of South Florida from its campus in St. Petersburg, Florida.

"We have always known there is oil under the surface; the questions we are exploring are where is it, in what concentrations, where is it going, and what are the consequences for the health of the marine environment?" said NOAA Administrator Dr. Jane Lubchenco. "This research from the University of South Florida contributes to the larger, three-dimensional puzzle we are trying to solve, in partnership with academic and NOAA scientists."

Other NOAA research missions that are fitting complimentary pieces of the 3-D puzzle include the NOAA Ship *Thomas Jefferson*, a 208-foot survey vessel, which is currently underway on a mission in the vicinity of the BP Deepwater Horizon oil spill. Researchers are taking water samples and testing advanced methods for detecting submerged oil while gathering oceanographic data in the area's coastal waters. The NOAA Ship *Gordon Gunter*, a 224-foot research vessel, returned June 3 from an eight-day oil detection mission in the vicinity of the BP Deepwater Horizon well head. During the effort, researchers collected water samples, conducted plankton tows, and employed echo sounders, autonomous underwater vehicles and other technologies to collect subsurface data. In addition, NOAA's P-3 "Hurricane Hunter" is deploying instruments to better track the movement of the Loop Current, and therefore improve our understanding of where the oil is moving at the surface and below the surface.

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STAY CONNECTED
YouTube

Received(Date): Tue, 08 Jun 2010 18:28:27 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: Re: Pelican Sample Announcement
To: Rachel Wilhelm <Rachel.Wilhelm@noaa.gov>
Cc: Oil_DWH <dwh.staff@noaa.gov>
Pelican-Weatherbird Research.docx

Hi Rachel,
Bob Haddad did a good job of explaining the issue with the Pelican data in the response to a NYT inquiry. He provides some detail on the invalid nature of the data, which should help provide a response to the AP reporter.
I've attached the response that Chris Vaccaro and Bob assembled.
thanks,
Shelby

Rachel Wilhelm wrote:
> We received a reporter query from the AP asking when we would release
> Pelican sample data, particularly now that Weatherbird II has been
> released. I understand that the samples were unusable. When are we
> planning to make that public?
>
> Thank you,
> Rachel
>

WEATHERBIRD CRUISE #2 - May 22-27 - Associated with Response activities, specially focused on assessing subsea dispersed petroleum from the top of the Loop Current to approximately 50-55 nm south of Mobile Bay.

-What sampling was taken? Focused on water sampling and on CTD (Conductivity/ Transport/Depth) and Fluorometry.

-What was found? WEATHERBIRD Scientists indicated observance of elevated fluorescence at 400m depth approx. 50-55 nm south of Mobile Bay. Additionally, scientists reported slicks at surface in various areas.

-Why are the results taking so long? Splits of water samples provided to NOAA on May 28th. Twenty-five samples were prioritized by WEATHERBIRD II scientists and are being analyzed by NOAA. In discussions with WEATHERBIRD II scientists, they are currently analyzing their splits. We anticipate a NOAA/USF joint data release next week (June 7-11).

WEATHERBIRD CRUISE #1 - May 5-17 - A NRDA Cruise

-What sampling was taken? Focused on Fisheries [baseline (tows - well away from well head)] and Plankton [baseline (well away from well head) and impact (near well head) using tows and shadow image particle profiling evaluation recorder (SIPPER)], with some surface water samples [baseline and impact] and sediment grabs [baseline])

-What was found? Historically, NRDA does not inform the response, and NRDA analysis occurs well after the response is ended (e.g., no real need to know baseline amounts prior to conducting the NRDA injury quantification which will compare baseline vs. post impacted conditions). Thus, NRDA samples are usually archived (or for water samples, they are extracted and archived).

As of about a week ago, NOAA agreed to make the NRDA data available to public. Many of these samples are now moving through the laboratory and will come out of the laboratory over the next few weeks. Our next step will be to submit these samples for 3rd party validation - a step which will take another two weeks. This is necessary as these data will form the basis of our legal case for damages against BP for injuries to the public's natural resources.

PELICAN CRUISE #2 - May 16-24, Unaffiliated with NRDA or Response (not NOAA supported; was supported by NSF)

-What sampling was taken? Pelican Scientists indicate water samples, fluorometry, CDT, etc. were taken during the cruise.

-What was found? Analysis ongoing.

PELICAN CRUISE #1 - May 2-16, Cruise unaffiliated with NRDA or Response (supported by NOAA through the National Institute for Undersea Science and Technology).

-What sampling was taken? Pelican Scientists indicate water samples, fluorometry, CDT, etc. were taken during the cruise.

-What was found? Based on Fluorometry, Pelican Scientists suggest identification of submerged petroleum plumes. NOAA requested splits of the water samples for petroleum chemistry. NOAA has not seen results from Pelican's analysis of their water samples. Fifteen (15) water samples provided to NOAA/LSU were received beyond the holding time, stored in plastic bottles, and at room temperature. For these reasons, under EPA guidance, the analytical results are considered invalid. Results from split samples run at LSU indicated no detectable hydrocarbons (in the parts per billion range). The caveat is that the manner in which the split samples were provided to NOAA/LSU invalidate these results based on EPA guidance.

-Why are the results taking so long? As stated above, NOAA results indicated no detectable hydrocarbons in the parts per billion range, but were considered invalid; Academic results pending.

Received(Date): Fri, 11 Jun 2010 16:58:44 -0400
From: Helen Golde <Helen.Golde@noaa.gov>
Subject: Re: wildlife fact sheet, feedback 6/11 cob
To: John.Rapp@noaa.gov
Cc: Rebecca.Chiampi@noaa.gov, Brian.T.Pawlak@noaa.gov, John.Oliver@noaa.gov,HoumaICC MMST <HoumaICC.MMST@noaa.gov>,David Cottingham <David.Cottingham@noaa.gov>,Matthew Thorburn <Matthew.Thorburn@noaa.gov>
DWH_factsheet.docx

John R.-- Here is my next attempt at this. The front side is designed to be static and not change unless some major activity begins or ends. The back side is designed to be updated daily from the wildlife report. This is a direct cut and paste from the daily wildlife report with the following exceptions:

- font
- remove * and definition of strandings
- slight change in the wording on necropsies (this could easily be changed to match this in the daily report, so that a direct cut and paste is possible)

I note here that I am not a layout expert and I did this in Word. I am sure that there are other programs and people with more talent than I have who could make this prettier, could have the text wrap around the photos, etc. I did the best I could.

I have marked this draft, because I would like my folks to look at the front side to ensure that there are no inaccuracies. This is for the most part taken from the interagency report you all did that they edited, but I moved a few things, changed into active voice and removed attribution (NOAA is...). Stuff is largely being done by NOAA folks, but under the auspices of the Wildlife branch, and I think it is cleaner to not say "NOAA is doing x", when so much of it is being done cooperatively under Unified Command.

I am cc'ing my folks on this now, asking them to take a look at the front page of this for accuracy.
That can be done simultaneously with whatever clearance you need to do downtown.

Once this is finalized, I hope that someone on your end can be in charge of updating it daily. We will be happy to add whomever you like to the distribution list for the daily wildlife report.

Let me know what else you may need.
-- Helen

John.Rapp@noaa.gov wrote:
> That's great. I'll defer to your judgement on those specifics.
> Just shoot us a copy when you're done and we'll run it by the bosses down here.
> Matt Thorburn
> for John Rapp
>
> ----- Original Message -----
> From: Helen Golde <Helen.Golde@noaa.gov>
> Date: Friday, June 11, 2010 1:33 pm
> Subject: Re: wildlife fact sheet, feedback 6/11 cob
> To: John.Rapp@noaa.gov

> Cc: Rebecca.Chiampi@noaa.gov, Brian.T.Pawlak@noaa.gov, John.Oliver@noaa.gov
>
>
>
>> Thanks, John-- I can make these changes by the end of the day. One
>> thing (only one!) that I would like to push back on. I would prefer
>> not
>> to put the number of turtles recovered in the bullet on "on water
>> rescue
>> team". I specifically pulled it out here so that the top section
>> could
>> remain boiler plate. If we put a number there, it will have to be
>> updated daily, which will be counter to the "cut and paste" update
>> from
>> the daily report. It is a likely change to get forgotten and can
>> easily
>> lead to internal consistency. Is a reference to the information
>> below
>> (other side of the page) okay?
>>
>> I think I can format this so that the front side is all boiler plate
>> and
>> the back side is all daily information.
>>
>> -- Helen
>>
>> John.Rapp@noaa.gov wrote:
>> > Helen,
>> >
>> > If this ends up being a regular thing, maybe we should think of our
>> wildlife daily report as two products: 1) the internal one that is
>> already circulated and 2) this public fact sheet that contains mostly
>> boiler plate but also has that day's summary numbers. Those could be
>> produced on the same schedule every day.
>> >
>> > It should synch with the maps that are produced daily and linked to
>> ERMA (via Michelle Jacovich). It should allow for a quick update
>> based on an exact cut/paste insert from the daily wildlife report.
>> Maybe we need to tweak the daily wildlife report just a little to
>> allow for a clean insertion. I want to eliminate any chance of
>> transposition error or unneccessary effort.
>> >
>> > We could also pair this fact sheet with the PR maps on
>> ERMA/Geoplaform.gov. That would give the public the PR map data and a
>> daily fact sheet that provides context.
>> >
>> > Regardless, lets get a test product to NOAA leadership today. We
>> can recommend an update schedule and public release process (eg ERMA).
>> >
>> > Some edits and comments attached.
>> >
>> > Matt Thorburn
>> > for
>> > John Rapp
>> >
>> > ----- Original Message -----
>> > From: Helen Golde <Helen.Golde@noaa.gov>
>> > Date: Thursday, June 10, 2010 11:50 pm

>> > Subject: Re: Action: COB Friday June 11th...
>> > To: John Rapp <John.Rapp@noaa.gov>
>> > Cc: Brian Pawlak <Brian.T.Pawlak@noaa.gov>, Jim Lecky
>> <Jim.Lecky@noaa.gov>, John Oliver <John.Oliver@noaa.gov>, Matthew
>> Thorburn <Matthew.Thorburn@noaa.gov>, David Cottingham <David.Cottingham@noaa.gov>
>> >
>> >
>> >
>> >> Here is my first cut at this. The first part is designed to not
>> have
>> >> to be changed dailly-- I edited down from the longer report to get
>> at
>> >> the guts of what we were doing for response and removed some of
>> the
>> >> changeable stuff and info on NRDA.
>> >>
>> >
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>> >>
>> >>
>> >
>> >
>> >> The summaries of Marine Mammal and Turtle strandings are directly
>>
>> >> from the daily wildlife report-- I removed the stuff about
>> historic
>> >> and the definitions of stranding. This can easily be updated
>> daily,
>> >> because it is a direct cut and paste from the daily wildlife
>> report--
>> >> just a change of font and indentation. I currently have info from
>>
>> >> today's report in there.
>> >>
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>> >>
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>> >
>> >
>> >> I think we can either do tables or photos. I just don't see how
>>
>> >> there is room for both. I think that the tables are pretty much
>> >> redundant of the text, so I would recommend photos. The attached
>>
>> >> version has tables-- which can also be updated daily pretty easily.
>> >>
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>> >>
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>> >
>> >
>> >> Your input on how to proceed is appreciated.
>> >>
>> >
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>> >>

>> >>
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>> >
>> >> -- Helen
>> >>
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>> >
>> >
>> >> John Rapp wrote: The final reports sent to DOI are attached.
>> >>
>> >
>> >
>> >>
>> >>
>> >
>> >
>> >> Brian Pawlak wrote: NOAA would like to have the wildlife report
>> >> consolidated to a 1-pager. I believe the most recent drafts of
>> those
>> >> reports are attached. It should include a table at the bottom
>> that
>> >> list the # of wildlife impacted (dead and alive) and it will be
>> >> updated daily. It should also include pictures from Murawski that
>>
>> >> showed an oiled turtle, it being cleaned, etc.
>> >>
>> >
>> >
>> >>
>>
>> --
>> Helen M. Golde
>> Deputy Director
>> Office of Protected Resources
>> NOAA Fisheries Service
>> 301-713-2332 x 108
>>
>>

--
Helen M. Golde
Deputy Director
Office of Protected Resources
NOAA Fisheries Service
301-713-2332 x 108

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

June 11 2010

MARINE MAMMAL AND SEA TURTLE RESPONSE DEEPWATER HORIZON MC252 OIL SPILL

Protection Strategy

The primary strategy to protect marine mammals and turtles is removing oil from the water. The Wildlife Operations Branch, Marine Mammal/Sea Turtle Unit, staffed by experts from NOAA, other Federal and State agencies and academic partners, are working around the clock to protect and rescue marine mammals and turtles that are at risk from the Deepwater Horizon MC252 oil spill. Because of NOAA's trust responsibility for marine mammals (under the Marine Mammal Protection Act) and sea turtles (under the Endangered Species Act), NOAA Fisheries has a key role in wildlife response during this event. Specific efforts to protect marine mammals and turtles are as follows:

- Shoreline Clean-up and Assessment Technique (SCAT) Teams – SCAT teams use standardized terminology to collect data on shoreline oiling conditions that supports decision-making for shoreline cleanup.
- Stranding Response Teams - Working closely with our pre-existing marine mammal and sea turtle stranding networks. Coastal beaches are under close scrutiny and stranded sea turtles and marine mammals (dead and live) are being collected, live animals are being taken to rehabilitation facilities and appropriate samples are being collected from dead animals, including full necropsies when possible.
- On Water Rescue Team – Deploying an on-water rescue team to search patches of oil and collect any encountered oiled sea turtles. Oiled sea turtles have been recovered for rehabilitation through this continuing effort (see daily updates on reverse side for specifics).
- Response Activity Support – Working with NOAA's Scientific Support Coordinators at each of the Incident Command Centers to improve their understanding of mitigation approaches to help protect wildlife from these response activities (e.g., in situ burns, berms, boom placement, and dispersant application). Identifying, contracting, and placing observers on certain surface oil clean up vessels to assess, document, and minimize risks to turtles from these operations.
- Sea Turtle Nesting Strategy – (Under Fish and Wildlife Service Lead) Conducting active nesting surveys and nest marking in the northern Gulf and SW Florida. The majority of sea turtle nests are being marked to identify nests for avoidance or controlled clean up by cleanup crews, and also to facilitate capture of hatchlings at emergence, if determined necessary.
- Baseline data collection - Leading Technical Working Groups (Fish, Mammal/Turtles, Shoreline, Submerged Aquatic Vegetation Human Use, Water Colum, Data Management, Chemistry/Sampling, and Corals) to collect data for baseline water, sediment, and biota characterization.

Document ID: 0.7.19.1320.1

Daily Stranding Information (as of 1800 June 10. 2010)

Sea Turtles:
351 total sea turtles verified to date within the "designated spill area" (increase of 20 from June 9 report)

- 317 stranded (increase of 16 from June 9)
  - 293 of the stranded were found dead (increase of 16 from June 9)
  - 24 of the stranded were found alive (no change from June 9)
    - 3 recovered alive but died in rehab (no change from June 9)
    - 4 turtles released alive (no change from June 9)
    - 17 live turtles in rehabilitation (no change from June 9)
- 34 turtles collected during directed turtle sampling efforts (increase of 4 from June 9)
  - 28 live turtles in rehabilitation (increase of 3 from June 9)
  - 3 turtles collected dead (increase of 1 from June 9)
  - 3 turtles died in rehabilitation (no change from June 9)

73 full or partial necropsies have been completed. The two primary considerations for the cause of death of the non-oiled recovered turtles are forced submergence or acute toxicosis. Further results are pending.



Live, oiled green turtle recovered from convergence/oil areas 1 June 2010.
On-water operations under Wildlife Branch, Unified Command.



Dr. Brian Stacy (NOAA OPR sea turtle veterinarian) conducting initial cleaning of oiled Kemp's ridley.
On-water operations under Wildlife Branch, Unified Command.

Dolphins:
39 dolphins have been verified to date within the "designated spill area" (increase of 1 from June 9).

- 37 were dead stranded dolphins (increase of 1 from June 9)
- 2 were live stranded dolphins, one of which that died shortly after stranding, one that was euthanized upon stranding (no change from June 9)

14 full or partial necropsies have been completed. Necropsy results are pending for all animals necropsied to date.

Document ID: 0.7.19.1320.1

Received(Date): Sat, 12 Jun 2010 23:07:28 -0400
From: Helen Golde <Helen.Golde@noaa.gov>
Subject: Wildlife fact sheet
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: John Rapp <John.Rapp@noaa.gov>, Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
DWH_Wildlife_factsheet3_tables.docx

Monica--

Two versions of the wildlife fact sheet are attached-- one with text updates and one with tabular updates. I think the tabular is better for a few reasons:
- it provides consistent information between NOAA and FWS
- it provides more easily accessible information
- it is fairly easy to update daily-- this is the format that the mammal/turtle and seabird wildlife groups report to Unified Command daily, so we should be able to get it sent to us.

I did the text one, to see if everything would fit, and just cutting and pasting from the NOAA daily report. So also fairly easy to update, assuming we can get FWS info, but less user friendly, I think.

I removed the information on SCAT teams because SCAT does not identify wildife strategies. They may observe and report animals in the area, but are not involved in response decision-making. They are also not in the Wildlife Branch, but within the Environmental Unit in Planning.

I hope this meets your needs.
-- Helen

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June 12, 2010

CUMULATIVE IMPACTS to WILDLIFE and ACTIONS TO PROTECT WILDLIFE in the GULF OF MEXICO

DEEPWATER HORIZON MC252 OIL SPILL

Joint Fact Sheet of the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration

Protection Strategy

The Unified Area Command's Wildlife Branches, staffed by experts from NOAA, USFWS, other Federal and State agencies, and academic partners, are working around the clock to protect and rescue wildlife that is at risk from the Deepwater Horizon MC252 oil spill.

For terrestrial wildlife, birds, marine mammals, and sea turtle protection, wildlife teams conduct surveys by air, land, and water to find and identify affected wildlife. Wildlife teams collect and capture both dead and live wildlife. In addition, there is a hotline for receiving calls from the public regarding reports of oiled wildlife. Calls to this hotline continue to help guide response efforts. Affected live wildlife are taken to the appropriate established rehabilitation centers to be cleaned or treated. Dead wildlife that are collected are sampled and stored for further evaluation by trained experts. Rehabilitated animals are released at appropriate times and places, taking into account, species, weather and location of oiled areas.

Terrestrial Wildlife and Bird Protection Strategy, U.S. Fish and Wildlife Service

The overall response strategy for terrestrial wildlife and bird protection is the removal or deflection of oil before it reaches shore and comes into contact with animals. Once oil is likely to reach shore, priority is given to protecting sensitive areas, including National Park Units, National Wildlife Refuges, and state protected areas. In addition to the protection activities noted above, protective measures have been employed that include the use of booms and skimmers. Some areas are double or tripled boomed, for example important rookeries.

Marine Mammal and Sea Turtle Protection Strategy, National Oceanic and Atmospheric Administration

The primary strategy to protect marine mammals and turtles is similar to that for terrestrial wildlife: minimizing contact between oil and wildlife. In addition to the response activities noted above, the wildlife teams are also working with NOAA's Scientific Support Coordinators at each of the Incident Command Centers to protect wildlife during response activities (e.g., in situ burns, berms, boom placement, and dispersant application). While initial consultations have already been conducted, the Wildlife Branch continues to improve the response process so that as activities are increased, Endangered Species Act and Marine Mammal Protection Act considerations are better integrated into the planning and operations process.

Wildlife Distress Hotline - 866-557-1401

DRAFT

Document ID: 0.7.19.609.1



Dr. Brian Stacy (NOAA OPR sea turtle veterinarian) conducting initial cleaning of oiled Kemp's ridley turtle.
On-water operations under Wildlife Branch, Unified Command.



JEFFERSON PARISH, La.-- Kayla DiBenedetto of the U.S. Fish and Wildlife Service carries an oiled pelican from a nesting area where she netted it in Barataria Bay to a waiting boat on Saturday, June 5, 2010. Coast Guard Photo by Petty Officer 2nd Class John D. Miller.

Wildlife Update (as of 1800 June 12, 2010)

The new total of National Wildlife Refuges at risk for oil impact now stands at 36. The addition is Hobe Sound National Wildlife Refuge near West Palm Beach, FL, on the Atlantic Coast.

To date, 1,183 birds have been collected in the Gulf region since April 30, including 728 in Louisiana. Of the total number, 631 were visibly oiled.

Fish and Wildlife Service-led bird surveys included overflights from Sarasota, FL to Key West FL, and from Marathon, FL to Tampa, FL.

As of today, 428 Service personnel are actively engaged in the oil spill response.

374 total sea turtles verified to date within the "designated spill area" (increase of 23 from June 10 report)

- 340 stranded (increase of 23 from June 10)
  - 312 of the stranded were found dead (increase of 19 from June 10)
  - 28 of the stranded were found alive (increase of 3 from June 10)
    - 4 recovered alive but died in rehab (increase of 1 from June 10)
    - 4 turtles released alive (no change from June 10)
    - 20 live turtles in rehabilitation (increase of 3 from June 10)
- 34 turtles collected during directed turtle sampling efforts (no change from June 10)
  - 28 live turtles in rehabilitation (no change from June 10)
  - 3 turtles collected dead (no change from June 10)
  - 3 turtles died in rehabilitation (no change from June 10)

39 dolphins have been verified to date within the "designated spill area" (no change from June 10).

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Document ID: 0.7.19.609.1

June 12, 2010

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DRAFT



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On-water operations under Wildlife Branch, Unified Command.



JEFFERSON PARISH, La.-- Kayla DiBenedetto of the U.S. Fish and Wildlife Service carries an oiled pelican from a nesting area where she netted it in Barataria Bay to a waiting boat on Saturday, June 5, 2010. Coast Guard Photo by Petty Officer 2nd Class John D. Miller.

Wildlife Update (as of noon June 12, 2010)

	Collected Alive				Collected Dead			
Birds	Visibly Oiled	No visible oil	Pending	Total	Visibly Oiled	No visible oil	Pending	Total
Alabama	16	0	0	16	7	178	1	186
Florida	14	0	0	14	13	178	0	191
Louisiana	498	0	0	498	126	149	0	275
Mississippi	2	0	0	2	4	48	8	60
Texas	0	0	0	0	0	0	0	0
Total	**530**	**0**	**0**	**530**	**150**	**553**	**9**	**712**

	Collected Alive				Collected Dead			
Sea Turtles	Visibly Oiled	No visible oil	Pending	Total	Visibly Oiled	No visible oil	Pending	Total
Alabama	2	2	0	4	0	5	49	54
Florida	0	6	1	7	0	0	31	31
Louisiana	2	3	0	5	4	2	68	74
Mississippi	0	11	1	12	0	73	80	153
Texas	0	0	0	0	0	0	0	0
On-the-water	31	0	0	31	3	0	0	3
Total	35	22	2	59	7	80	228	315

	Collected Alive				Collected Dead			
Mammals	Visibly Oiled	No visible oil	Pending	Total	Visibly Oiled	No visible oil	Pending	Total
Alabama	0	0	0	0	0	3	0	3
Florida	0	2	0	2	0	0	1	1
Louisiana	0	0	0	0	2	23	1	26
Mississippi	0	0	0	0	0	7	0	7
Texas	0	0	0	0	0	0	0	0
On-Water	0	0	0	0	0	0	0	0
Total	0	2	0	2	2	33	2	37

DRAFT

DRAFT

Received(Date): Mon, 14 Jun 2010 10:01:42 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: Re: Press Release on Seafood Safety
To: "'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>

I was looking for that too. Stay tuned.

----- Original Message -----
From: John.Rapp@noaa.gov <John.Rapp@noaa.gov>
To: margaret.spring@noaa.gov <margaret.spring@noaa.gov>
Sent: Mon Jun 14 09:44:15 2010
Subject: Press Release on Seafood Safety

Margaret,

The large package of seafood safety information sent by Monica on Saturday =
didn't contain a press release. Are we still in clearance with this releas=
e? Lauren Lugo was asking and thought you might know.

Matt Thorburn
for John Rapp

Received(Date): Thu, 17 Jun 2010 08:56:24 -0400
From: Beth Dieveney <Beth.Dieveney@noaa.gov>
Subject: NRT fatigue document
To: DWH leadership <DWH.Leadership@noaa.gov>

Attached is the NRT fatigue document, finalized last year. The body of the document is not long, the attachments are the main bulk. The document provides a methodical way of assessing fatigue, and discuses fatigue impacts. Feel free to distribute. Thanks --- Nir

--
Beth Dieveney
NOAA Program Coordination Office
Office of the Under Secretary
14th & Constitution Ave., NW, Room 5811
Washington, DC 20230

phone: 202-482-1281
b7c personal information
fax: 202-482-4116

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NRT

Volume I

Guidance for Managing Worker Fatigue During Disaster Operations

Technical Assistance Document

April 30, 2009

THE NATIONAL RESPONSE TEAM

Document ID: 0.7.19.1363.1

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Acknowledgements

The National Response Team (NRT) acknowledges the NRT member agencies, and state and Federal agencies participating on the Regional Response Teams (RRTs), for their contributions in preparing this document. We invite comments or concerns on the usefulness of this document in all-hazard planning for responses. Please send comments to:

U.S. National Response Team
NRT Response Committee
U.S. Environmental Protection Agency
(Mail Code 5104A)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

U.S. NRT Member Agencies:

Chair: U.S. Environmental Protection Agency
Vice Chair: U.S. Coast Guard

U.S. Department of Agriculture
U.S. Department of Commerce
U.S. Department of Defense
U.S. Department of Energy
U.S. Department of Health and Human Services
U.S. Department of Homeland Security
U.S. Department of the Interior
U.S. Department of Justice
U.S. Department of Labor
U.S. Department of State
U.S. Department of Transportation
U.S. Federal Emergency Management Agency
U.S. General Services Administration
U.S. Nuclear Regulatory Commission

For more information on the NRT, please visit *www.nrt.org*.

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Table of Contents

Executive Summary..... 6

1.0 Introduction..... 8

1.1 Phases of Disaster Operations..... 8

1.2 Fatigue Risk Factors 9

2.0 Recommendations 10

2.1 Organizational Fatigue Management Program: Step-by-Step Guide 12

2.2 Incident-Specific Fatigue Management Plan: Template..... 15

3.0 Conclusion 16

Appendix A: Fatigue Management Risk Assessment Tool.....A-1

Appendix B: Potential Controls for Mitigating Fatigue Risk Factors..... B-1

Appendix C: Sample Incident-Specific Fatigue Management Plan.....C-1

Appendix D: Completed Risk Assessment Tool.....D-1

Document ID: 0.7.19.1363.1

Executive Summary

This Technical Assistance Document (TAD) the first of two documents created by the National Response Team (NRT) to address worker fatigue during large-scale disaster operations, such as those following the Oklahoma City bombing, the 9-11 attacks, anthrax contamination, the Columbia Space Shuttle Recovery, and Hurricanes Katrina, Rita, and Wilma. This document is intended to serve as a hands-on manual to assist organizations with the development of programs and plans to address fatigue issues among disaster workers. The second document, "Volume II: Guidance for Managing Worker Fatigue During Disaster Operations: Background Document," summarizes the essential information compiled and reviewed by the NRT while developing its recommended approach.

After a large-scale disaster, workers often work longer shifts and more consecutive shifts than they would typically work during a traditional 40-hour work week. The fatigue and stress that may arise from strenuous work schedules can be compounded by the physical and environmental conditions in the affected area after a disaster: non-existent, damaged, or limited critical infrastructure (roads/traffic signals, utility lines, transportation/distribution of basic necessities, etc.); vegetative, construction, and hazardous debris; flooding; hazardous material releases; and displaced pets, indigenous wild animals, and snakes or other reptiles. The relationship between exposure to disaster conditions and strenuous work schedules has not been studied for disaster workers. Thus, there is limited data on the resulting effects on disaster workers' physiological capabilities and risks of injury. Available literature focusing on non-disaster workers, however, suggests that working longer hours increases the risk of occupational injuries and accidents and that this risk also may be affected by the nature of the work and the characteristics of the individual worker. Therefore, it is of critical importance for the NRT and other disaster organizations to take a proactive approach to addressing worker fatigue during disaster operations.

The NRT recognizes that disaster workers represent a unique population, and one on whom relatively little attention has been focused. Because of the broad variety of activities in which disaster workers may be engaged, as well as the widely varying circumstances in which they may be working, the NRT recognizes that there is no simple solution or one-size fits all approach to dealing with disaster worker fatigue issues. Instead, the NRT is recommending an approach that will assist organizations with the development of their own fatigue management efforts specifically targeted at the nature of their activities and the needs of their workers. This recommendation calls for a comprehensive, two-pronged approach that will result in the development of an organization-wide fatigue management program, which the organization will then use to construct incident-specific fatigue management plans to meet the circumstances and needs of individual incidents.

The TAD identifies four essential components for the development of fatigue management programs and plans – assessment, risk factors, controls, and evaluation – and discusses the kinds of information needed for each component. Dealing with these four components will require that organizations assess the types of activities they can expect to conduct during a disaster operation, estimate the conditions under which these activities may be performed, identify the factors

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typically present at a disaster site that can result in fatigue (i.e., fatigue risk factors), define controls that target these risk factors, and establish evaluation schedules to assess the effectiveness of the controls. In addition, the TAD provides an example of an incident-specific fatigue management plan. The document also provides users with a fatigue management risk assessment tool (see Appendix A), which has been developed to assist with the formulation of fatigue management plans and the identification of resources that each organization should have in place in preparation for responding to major emergencies.

The recommendations in this document can be applied throughout a disaster. But, they are targeted primarily at the operations occurring once rescue efforts have been concluded. The Incident Commander (IC)/Unified Command (UC) will make the decision to transition to the next phase of operation. Once the transition occurs, risk-benefit decision making must be re-evaluated to reduce the level of risk to workers. It is important to recognize that during a large-scale disaster this transition may not occur in all areas affected by the incident at the same time; rescue operations may be continuing in one area while life-sustaining activities may have begun in another.

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1.0 Introduction

Concerns about disaster worker fatigue issues have been growing over the past several years, but really became a focus of NRT attention after the massive devastation of the 2005 hurricane season. The NRT found that available literature does not address the question of how strenuous work schedules combine with the unique hazards and exposures associated with disaster operations to impact worker fatigue. Rather, existing literature and work practices generally focus on the effects of shift work and/or extended work hours on employees working normal, non-disaster-related employment and focus on reducing or limiting work hours. While this approach may be appropriate for employees who are performing routine tasks/operations in a controlled environment, it does not address the full range of factors that are likely to be associated with disaster operations and that may present fatigue risks for disaster workers.

The purpose of this TAD is to fill this gap and provide an approach for dealing with the unique needs of disaster workers. This TAD guides organizations step by step through the process of developing their own individual fatigue management programs from which they can then develop incident-specific fatigue management plans. To do this, organizations need to assess the types of activities they expect to conduct during a disaster, estimate the conditions under which these activities may be performed, identify the factors typically present at a disaster site that can result in fatigue (i.e., fatigue risk factors), define controls that target these risk factors, and establish evaluation schedules to assess the effectiveness of these controls. While the recommendations in this document can be applied throughout a disaster operation, they are primarily targeted at the operations occurring once rescue efforts have been concluded.

1.1 Phases of Disaster Operations

When a disaster occurs, the initial focus is responding to the event – rescuing people, saving lives, ensuring that the injured receive treatment, and providing shelter and food for the victims. During initial response operations, decisions and actions are time sensitive because site conditions often are uncontrolled and can change rapidly, as in the cases of fires, explosions, or hazardous substance releases. The availability of responders and response equipment may be limited, and options for controlling emergency responder exposures may be restricted. During this phase of an operation, the risks to emergency responders from higher and more hazardous exposure levels and longer work shifts must be balanced against the very real need to save lives, protect the public, and control the emergency. Risk management principles must be integrated into the IC/UC decision-making process to ensure that emergency responders are adequately protected and able to perform their operations safely.

Once the initial rescue activities have been accomplished, however, the pace of operations and operational objectives stabilize, and decisions about acceptable risks, exposure controls, and work shifts should be re-evaluated and revised. Site conditions are better characterized and controlled, and additional resources may begin to arrive on site. At this time, the focus has shifted to life-sustaining operations, such as providing temporary housing, restoring utilities (electrical, gas, water, sewer, and communications), tarping roofs, and removing debris. Although the hazards associated with extended work shifts, work weeks, and work rotations

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should be evaluated and addressed during all phases of an incident, it is even more important to focus on them once the rescue phase has concluded and workers may already be experiencing fatigue from their rescue efforts.

The IC/UC makes the decision to transition from the rescue phase to the next disaster operations phase based on incident-specific circumstances. This transition decision impacts how operations are prioritized and conducted, and where resources will be used. Once the transition occurs, risk-benefit decision making must similarly shift to reduce the level of risk to workers. During this phase, the IC/UC should re-evaluate reliance on extended work shifts, work weeks, and work rotations; assess fatigue risk factors; and implement appropriate fatigue management recommendations. It also is important to recognize that this transition may not occur in all areas affected by the incident at the same time, because there are likely to be variations in the extent of the damage, thus rescue operations may be continuing in one area while life-sustaining activities may have begun in another.

1.2 Fatigue Risk Factors

For the disaster worker population, there are many factors that can lead to increased risk of fatigue, reduced alertness and productivity, and increased risk of accidents and injuries in the workplace. Chief among these is the length of work shifts. Research indicates that as work shift length increases, the risk of accidents and injuries also increases (see "Volume II: Guidance for Managing Worker Fatigue During Disaster Operations: Background Document" at www.nrt.org). This risk further increases if the shifts are night shifts rather than day shifts and if the length of the work week also increases. Additional factors increasing the risk of fatigue include disrupted sleep patterns; exposure to environmental, physical, and/or chemical hazards; limited sanitation facilities; poor living conditions; and limited access to nutritious meals. These and numerous other factors can be present during most disaster operations in varying degrees. In addition, because site conditions, operations, and available resources will differ among disasters, the contribution of each of these risk factors to overall fatigue and fatigue-related accidents and injuries will vary, as will the appropriate controls for reducing responder risk.

This broad range of factors that can result in fatigue (i.e., fatigue risk factors) leads to the conclusion that the most effective way to reduce disaster worker fatigue is to adopt an approach that assesses and controls for each of these risk factors in proportion to the hazard it presents at a given disaster. The initial step in this approach is to identify and assess the fatigue risk factors associated with likely operations and incident conditions so that appropriate control measures—such as work scheduling, rest breaks, planning for temporary living conditions, access to recreational/exercise equipment, and reducing worker driving time—can be implemented efficiently and effectively for individual incidents. One tool for conducting this assessment is a Risk Factor Assessment Tool included in Appendix A.

The situations listed below can be additional "fatigue risk factors" that should be considered when developing policies and procedures to manage worker fatigue during disaster operations:

- Insufficient or fragmented sleep (less than 7-8 hours of uninterrupted sleep)

Document ID: 0.7.19.1363.1

- Shift work/rotating shifts/night shift work
- Sleeping during the day
- Sleep debt with no possibility to make-up lost sleep
- Lack of/limited rest breaks
- Physically and mentally demanding work
- Exposure to temperature and other environmental extremes
- Exposure to chemical and physical hazards, particularly if these are in a mixture or are not well characterized
- Use of Personal Protective Equipment (PPE)
- Limited access to recreational/fitness equipment
- Exposure to psychological stressors (e.g., close contact with injured or dead victims)
- Unfamiliar work environment and/or work task/operations
- Temporary or communal living conditions (which may contribute to psychological stress and result in insufficient or fragmented sleep)
- Limited access to nutritious meals
- Travel time to work site

2.0 Recommendations

Because of the broad variety of activities in which disaster workers may be engaged, as well as the widely-varying circumstances in which they may be working, the NRT is recommending an approach that will assist organizations with the development of their own fatigue management efforts specifically targeted at the nature of each organization's activities and the needs of its workers. This recommendation calls for a comprehensive, two-pronged approach that will result in the development of an organization-wide fatigue management program, which each organization will then use to construct incident-specific fatigue management plans to meet the circumstances and needs of individual incidents.

The fatigue management program should reflect the experiences of the organization (i.e., nature of incidents with which the organization has previously been involved), the conditions to which workers previously have been exposed, and the efforts previously made to deal with the effects of these experiences. The program also should reflect the lessons the organization has learned from those experiences. It broadly describes the practices, procedures, and resources the organization has in place to assess and manage fatigue. The incident-specific fatigue management plan, which is tailored to meet the particular conditions of the incident, identifies the fatigue risk factors associated with the disaster operations being performed[1] and the controls that will be used throughout these operations to manage worker fatigue. In addition, both the program and the incident-specific plan should identify roles and responsibilities (i.e., who in the organization is going to do what) for the implementation of each section of the program's and plan's provisions. The organizational program and the incident-specific plan each should have the following four components, which also are summarized and compared in Table 1:

[1] **It should be noted that although this document focuses on fatigue management for post-rescue operations, organizations are urged to apply fatigue management techniques throughout all phases of an operation.**

Document ID: 0.7.19.1363.1

- **Assessment** – This component describes the nature of incidents to which the organization responds and the types of work performed.

- **Identification of Risk Factors** – This component identifies and describes the range of risk factors to which the organization's workers can be exposed.

- **Controls –** This component describes the organization's policies, procedures, and work practices that are applied to mitigate the various risk factors identified in the previous component.

- **Evaluation –** This component identifies and describes the process that will be used to assess the effectiveness of the controls in mitigating worker fatigue.

Table 1 compares provisions of the organizational fatigue management program with those of the incident—specific fatigue management plan.

Table 1: Summary and Comparison of Fatigue Management Program and Plan Components

Component	Organizational Fatigue Management Program	Incident-Specific Fatigue Management Plan
Assessment	Describes the types of events to which the organization has responded in the past and anticipates responding to in the future, the types of work performed, conditions to which disaster workers were exposed; identifies individuals responsible for overseeing this component of the program.	Describes the event, the types of work to be performed, conditions under which workers will be operating, and identifies individuals responsible for conducting the initial assessment and providing updates; describes how initial information will be obtained and updated, depending on the level of infrastructure damage.
Risk Factors	Describes fatigue risk factors workers have experienced in the past and can anticipate experiencing in the future.	Identifies fatigue risk factors likely to be present at the current event and individuals responsible for providing initial and updated information.
Controls	Describes fatigue management controls the organization has used in the past and/or anticipates using in the future.	Identifies specific fatigue management controls to be implemented during this event and the individuals responsible for implementing

Document ID: 0.7.19.1363.1

Component	Organizational Fatigue Management Program	Incident-Specific Fatigue Management Plan
		this section of the plan.
Evaluation	Describes evaluation methods used in the past and those currently available for use to assess the effectiveness of the organization's fatigue management efforts.	Describes the specific evaluation methods to be used at this event and the schedule for their application.

2.1 Organizational Fatigue Management Program: Step-by-Step Guide

This section outlines the steps to be taken in developing the components of an organizational fatigue management program.

Assessment

This component lays the foundation for the development of the organization's fatigue management program. Preparing for the future involves incorporating lessons learned from the past.

- Review the organization's history over a specific time frame (e.g., the last five years) to determine the nature of the incidents (e.g., floods, hurricanes, earthquakes, wildfires, and/or large-scale explosions) to which the organization has deployed personnel for disaster operations, the types of work performed, the physical conditions (e.g., levels of devastation and infrastructure damage, working and living conditions, and logistical challenges) to which workers were exposed, the duration of deployments, and the lengths of work shifts. This component also should include information on the types of conditions to which workers were exposed that may have contributed to emotional reactions or the development of any mental health-related issues (e.g., posttraumatic stress disorder).

- Review the response histories of similar organizations over a specific time frame and incorporate this information to augment the information obtained from the initial organizational review.

- Based on the historical review, and taking into consideration any recent organizational mission changes, estimate the nature of likely future disaster operations in which the organization may become involved.

- Identify potential mechanism(s) for obtaining information on site conditions, particularly when there may have been significant communications disruptions and infrastructure damage in the affected area (e.g., flyovers, alternative communications methods such as satellite phones, shortwave radios, and walkie-talkies).

Document ID: 0.7.19.1363.1

Identification of Fatigue Risk Factors

Identifying potential risk factors to which the organization's workers may be exposed also will require a historical review of risk factors to which workers in this and similar organizations have been exposed. The historical review can be helpful in encouraging organizations to focus on lessons learned after previous disasters and modify their plans based on those lessons.

In general, risk factors can be assigned to six categories. For each of these categories, after describing previous experiences, also include modifications expected to be made for future operations based on any lessons learned from past disaster operations. The organization's process for assessing the significance of each risk factor and setting priorities for the use of resources and controls also should be included in this component. Appendix A provides a tool for conducting this assessment.

- **Work Hours and Rest Periods –** Describe the work hours, work rotations, and rest periods that are characteristic of types of operations the organization has conducted in the past and anticipates conducting as part of future disaster efforts. For example, a policy might state that workers have a minimum of 10 hours rest time in a 24-hour time period, with as much of that in consecutive hours as possible; and 48 hours time off after 14 consecutive days of work

- **Site Conditions –** Describe the range of conditions previously encountered by the organization's responders while performing disaster operations and that are likely to be encountered in the future (e.g., extent of devastation, including infrastructure damage, population displacement, and security of worksite).

- **Living Conditions** – Describe the nature of accommodations generally provided for the organization's workers during previous disaster operations (e.g., hotel/motel, trailers, tents; food service or MREs; sanitary facilities; and recreational opportunities).

- **Nature of Work** – Describe the various types of work (e.g., collection of orphaned containers, tarping roofs, collection of white goods, and oil spill cleanup) performed by the organization in previous disaster operations and, considering any mission changes, likely to be performed by the organization at future disaster operations.

- **Management and Administrative Support** – Describe the management and administrative support functions and services provided at previous disaster operations (e.g., contracting, financial services, and clerical support).

- **Emotional Stress –** Describe the types of stressful situations previously experienced by the organization's disaster workers and likely to be experienced at future events (e.g., exposure to bodies or seriously injured people, severe devastation, and/or homeless victims).

Document ID: 0.7.19.1363.1

The contribution of each fatigue risk factor to the overall fatigue risk will vary among incidents and should be assessed when developing an incident-specific plan. The organization's process for assessing each fatigue risk factor should be described in this component of the operational program. The Risk Management Assessment Tool in Appendix A can be used to evaluate the potential contribution of each risk factor to the overall risk for workers. This also allows the organization to identify the work practices, policies, and resources it should have in place to address the most significant risk factors in anticipation of a major disaster and a likely deployment of disaster workers.

Controls

For each of the control categories listed below, review lessons learned from previous disaster operations to ensure that past omissions or deficiencies have been remedied. A fatigue management program should include information for the seven categories listed below. Examples of controls are provided in the discussion that follows; a more complete list of potential controls can be found in Appendix B.

- **Education –** Describe the education program that the organization has in place to ensure that disaster workers are prepared, as much as possible, for whatever they will face when on site and how to take care of themselves. Educational topics can include information on such issues as signs, symptoms, and health effects of fatigue, as well as disaster deployment preparedness training. The educational component of this section of the program should address the process used to educate/inform workers on how the organization deals with each of the topics that follow.

- **Advance Planning** – Describe organizational components already in place to ensure contingency planning for incident mobilization and identify who does what and when (e.g., roles of advance incident management teams). Many of the support services that are critical for managing fatigue require advanced planning. This section should describe the organization's policies regarding the assignment of personnel to positions for which they are specifically trained and medically cleared, the provision of PPE when needed, considerations for additional medical requirements (e.g., unique vaccinations), and the typical procedures in place for checking workers in and out so that workers' locations are tracked throughout the incident effort. This section should also address base camp/site security if these services will be used to control access to worksites or base camps. In addition, efforts should be made to ensure that the organization's disaster workers practice advance planning themselves (e.g., have "go kits" ready, have alternatives in place for child care, pet care, and bill paying).

- **Work Hours and Rest Periods** – Describe the organization's policies regarding duration of deployments, work hours, work shift rotation (if applicable), and rest breaks during the specific phases of a disaster operation, including time off after a pre-determined number of consecutive days of work (e.g., minimum of 10 hours rest time in a 24-hour time period, with as much of that in consecutive hours as possible; and 48 hours off after 14 consecutive days of work). Describe how this policy will be managed and enforced

Document ID: 0.7.19.1363.1

during disaster operations (e.g., provisions in place to ensure that sufficient personnel who are properly trained and medically qualified will be available for deployment).

- **Transportation –** Describe the range of transportation method(s) generally used by workers to reach IC/UC during disaster operations, as well as transportation modes potentially available for moving disaster workers from base camps to work areas. This section should include a variety of options to reflect the various situations the organization's workers will face and should recognize the potential for worker impairment and potential driver impairment from long work hours.

- **Living Conditions** – Describe the range of lodging options utilized by the organization in the past (e.g., commercial hotels/motels, trailers, tent cities), as well as the options for providing meals, privacy, quiet sleep areas, sanitation facilities, security, and laundry facilities. If new options will be considered, these also should be described.

- **Recuperation Provisions** – Describe organizational policies regarding provision of access to facilities and opportunities for exercise and recreation (e.g., local community college has made gym available), recognizing that recreational opportunities help to maintain worker functionality.

- **Health Care Services** – Describe the full range of medical, mental health, and stress management services that can be provided by the organization during disaster operations.

Evaluation

Evaluating the effectiveness of the organization's fatigue management efforts ensures the continued effectiveness of the organization's workforce over time.

- Describe the organization's policy for conducting evaluations during a disaster operation to enable quick course corrections, as needed. If the organization has not previously had such a policy in place, consider developing one. Examples may be available from other similar organizations.

- Describe the organization's policy for conducting evaluations at the end of a response for incorporation into a "lessons learned" report that will be used to make systemic program changes. Also describe policies and procedures in place for implementing lessons learned. If none exist, consider developing such policies and procedures.

2.2 Incident-Specific Fatigue Management Plan: Template

The incident-specific fatigue management plan includes the same components as the organizational program described in Section 2.1, but targets all of the information at the specific incident. The information in the organizational program provides a menu of options to be used in the development of the plan. The template below presents an optional format for an incident-

Document ID: 0.7.19.1363.1

specific fatigue management plan. A sample of a completed incident-specific fatigue management plan can be found in Appendix C.

Name of Incident

Location:

IC/UC Personnel:

Description of Event & Site Conditions:

Fatigue Risk Factors Present:

- **Work Hours & Rest Periods –**
- **Living Conditions –**
- **Nature of Work –**
- **Management & Administrative Support –**
- **Emotional Stress –**

Controls to Be Implemented:

Evaluation Schedule:

3.0 Conclusion

Disaster workers represent a unique population, and one on whom relatively little attention has been focused. Because of the broad variety of activities in which workers may be engaged, as well as the widely varying circumstances in which they may be working, the NRT recognizes that there is no simple solution or one-size-fits-all approach to dealing with disaster worker fatigue issues. Instead, the NRT is recommending a comprehensive, two-pronged approach that will result in the development of an organization-wide fatigue management program, which the organization will then use to construct incident-specific fatigue management plans to meet the circumstances and needs of individual incidents.

The NRT recognizes the impossibility of preparing for every conceivable contingency in disaster operations. Given the current dearth of guidelines for protecting disaster workers, however, the recommendations presented in this TAD represent a constructive first step in raising awareness of the need to better ensure the health and well-being of these workers. The health effects, both physical and mental, of participating in operations following the 2001 terrorist attacks and the 2005 hurricanes are now recognized. It is the goal of the NRT to provide organizations that participate in disaster operations with a menu of options that can reduce the detrimental effects of this essential work on their workers and ensure the continued availability of workers to help this country meet the challenges of future disastrous events—whether natural or human-caused.

Document ID: 0.7.19.1363.1

Appendix A: Fatigue Management Risk Assessment Tool

This tool for evaluating risk factors and quantifying risk can be used to assist in developing the plans and procedures and identifying the resources each organization should have in place in anticipation of a major emergency response. As noted previously, this document and tool are primarily for use during the post-rescue phase of a long-term emergency response operation.

The tool identifies "risk factors" and "stressors" within each "risk factor" using the concept of Operational Risk Management and aspects of risk assessment tools used by Department of Defense (DOD) agencies and the United States Coast Guard (USCG). The Fatigue Management Risk Assessment Tool is loosely based on the USCG Green-Amber-Red (GAR) Assessment Model. Instead of the standard elements of GAR, fatigue risk factors or stressors have been identified (Column 1). These five (5) major factors that contribute to or are affected by fatigue and their associated sub-factors, or "stressors" (Column 2), are identified in the research on fatigue and extended work hours.

The risk factor or stressors include:

- Major Factor A - Time – Sub-factors: long hours (more than 8 hours/day), extended hours per week (greater than 40 hours per week), and extended weeks (more than two weeks);
- Major Factor B - Living Conditions – Sub-factors: quarters, food, sanitation, and recreation/leisure opportunities;
- Major Factor C- Nature of Work – Sub-factors: phase (rescue, response, or demobilization), activity, level of PPE, shift work, security, familiarity with area, and familiarity with emergency and disaster work;
- Major Factor D - Site Conditions – Sub-factors: chemical hazards, multi-chemical hazards, ionizing radiation, and other WMD; and
- Major Factor E - Emotional Stress – Sub-factors: potential for encountering casualties (wounded or deceased) and people who have lost relatives, friends, property, pets, etc.

The tool lists suggested stressors for each risk factor listed above in Column 2. Each of the stressors has been assigned a **weight factor** (the relative value of these weight factors was determined based on experience of the authoring agencies of this document [Department of Defense, United States Army Cops of Engineers, Department of Labor, Environmental Protection Agency, National Institute for Occupational Safety and Health, AIHA/Engineering Industry-SIG and Center for Construction Research and Training]). The stressors identified and the weighting factors suggested are subjective in nature and are provided as a guideline only; they may be customized based on the experience of a specific organization.

Within the table, each stressor is aligned with several increasing exposure levels (found in Columns 4, 6, 8, and 10). Each exposure level is associated with an **exposure factor**. The relative weight of the exposure factors is based on the literature reviewed and the experience of the authors. They are subjective in nature and are provided as a guideline only; they may be scaled differently based on the experience of a specific organization. **By multiplying each weight factor by the appropriate exposure factor, a numerical value for risk can be developed**.

Document ID: 0.7.19.1363.1

Appendix A: Fatigue Management Risk Assessment Tool

Columns 5, 7, 9, and 11 are scoring columns. Once a stress factor is identified, its weighted value in column 2 is multiplied times the exposure factor identified (in column 4, 6, 8, or 10) and the score is placed in columns 5, 7, 9, and 11. An example calculation is provided below:

Operations will extend three weeks after the rescue phase. Work will be accomplished in 10 hours per day; 40 – 50 hours per week, and will continue for three weeks. The weight factor associated with the stressor *Long Hours* (1) would be multiplied by the exposure factor associated with the exposure level of 10 hours per day (2, as identified in Column 6) resulting in a risk value of 2 (1 x 2 = 2). In the Extended Time/Week row the score in Column 7 would be (2 x 2=) 4 and the score in Column 6 would be (3 x 2 =) 6. By adding these three scores, the total score for *Major Risk Factor A. Time* would be (2+4+6=) 12. This score would be placed in Column 12 in the *A. Totals* row.

This process is repeated until all applicable major stressor factors have been assessed.

Column 13 lists the risk value range for each major stressor factor. As the calculated risk number increases, so does the need for controls. These controls can be included in the incident-specific fatigue management plan. Column 14 lists suggested corrective actions for each risk factor in a major factor. Note each risk number and corrective action needs to be looked at as an individual factor and should be addressed in the incident specific plan along with the other major contributing factors identified in the assessment.

Like the GAR Assessment Model, as the total scores within major factors and as a whole increase, decisions and responsibilities pertaining to risk management strategies fall on higher levels of management. In the Corrective Action column there are four levels of risk for each Major Factor. No action and increasing awareness action decisions can be made at the field level. As scores increase, the decision to develop Site-Specific Fatigue Management Plans, Level 3, or to implement all or portions of the Agency fatigue management program, Level 4, will lie with senior Response Management and Agency Senior Management, respectively. If corrective actions are implemented effectively, the risk numbers would be adjusted and there would be no "unacceptable" score. With respect to individual factors, agencies may set risk numbers that, when reached, are considered "unacceptable," e.g., allowing worker to work for more than 72 hours per week for more than 4 weeks or allowing workers to be exposed to radiation at levels > 5 rem /year.

Acronyms:

- WMD - Weapons of Mass Destruction
- HASP - Health and Safety Plan
- AHA - Activity Hazard Analysis
- APP - Accident Prevention Plan
- HAZWOPER - Hazardous Waste Operations and Emergency Response
- SSHP - Site Safety and Health Plan
- CIH - Certified Industrial Hygienist
- CSP - Certified Safety Professional
- CHP - Certified Health Physicist

Document ID: 0.7.19.1363.1

- CISM – Critical Incident Stress Management
- mrem - milliroentgen equivalent man
- rem - roentgen equivalent man

Document ID: 0.7.19.1363.1

Appendix A: Fatigue Management Risk Assessment Tool

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Risk Factor	Stressor	Weight Factor ↓	Exposure Factor 1		Exposure Factor 2		Exposure Factor 3		Exposure Factor 4		Total	Risk #	Corrective Action Plan
A. Time	Long Hours	1	≤ 8 hrs/day		> 8 < 10 hrs /day		> 10 <12 hrs/day		12 hrs/day			0 - 6	No action (unless required by assessment of Stressors B-E)
	Extended Time/Week	2	≤ 40 hrs/wk		> 40 < 50 hrs/wk		> 50 < 72 hrs/wk		> 72 hrs/wk			7 - 12	Increase awareness + actions based on assessment of Stressors B-E
	Extended Weeks Without A Full Day Off	3	2 weeks		3 weeks		4 weeks		> 4 weeks			13 - 18	Develop fatigue management plan as part of HASP (AHA) + actions based on assessment of Stressors B-E
												19 - 24	Implement pre-approved fatigue management plan + actions based on assessment of Stressors B-E
	A. Totals												
B. Living Conditions	Quarters	1	Home		Typical Business Travel		Recreational Vehicles (RVs)		Makeshift Shelter			0 - 8	No action unless assessment of Stressors A, C, D, or E indicates need
	Food	1	Home		Typical Business Travel		Mass Dining Facilities		Improvised			8 -12	Increase awareness and monitoring by managers; address in separate AHA or actions based on assessment of Stressors A, C, D, or E
	Sanitation	1	Home		Typical Business Travel		Mass Washing Facilities		Improvised			12 - 16	Address in Pre-approved Living Condition Management Plan or actions based on assessment of Stressors A, C, D, or E
	Recreation/ Leisure Opportunities	1	Home		Typical Business Travel		Limited		None				
	B. Totals												
C. Nature of Work	Phase	2	Demobilization/ Report Writing		Recovery		Response		Rescue			0 - 16	No Action unless assessment of Stressors A, B, D, or E indicates need
	Activity	1	Office Admin		Front Line Admin (MASH)		Field Oversight		Field Worker			17 - 32	Increase awareness, address in separate AHA or actions based on assessment of Stressors A, B, D, or E
	Level of Protection	3	Level D		Modified Level D/C		Level B		Level A				
	Shift Work	4	Normal Day		Normal night		Swing		12am:12pm; 12pm;12am			33 - 48	Site-Specific Management Plan for nature of work to include a security plan + plans based on assessment of Stressors A, B, D, or E
	Security	4	Normal Day		Normal Night		Limited		Sporadic			49 +	Address in Pre-approved Management Plan for nature of work + plan based on assessment of Stressors A, B, D, or E
	Familiarity with Area	2	High		Moderate		Slight		None				
	Familiarity with Emergency Response (ER) Work	4	High		Moderate		Little		Training Only				
	C. Totals												
D. Site Conditions	Chemical	1	Controlled		Controlled and Predictable		Controlled but Unpredictable		Uncontrolled			0 - 11	(APP) + actions based on assessment of Stressors A, B, C, and E
	Multi-chemical	2	Controlled		Controlled and Predictable		Controlled but Unpredictable		Uncontrolled			12 - 22	APP + HAZWOPER SSHP + actions based on assessment of Stressor A, B, C, and E
	Ionizing Radiation	4	Background (BKG)		> BKG < 100 mrem/hr		> 100 mrem/hr < 5 rem/yr		> 5 rem/yr			23 - 33	APP + HAZWOPER SSHP CIH, CSP or CHP Program Manager + actions based on assessment of Stressors A, B, C, and E
	Other WMD	4	None		Potential		Known Levels		Unknown Levels			34 +	APP + HAZWOPER SSHP CIH, CSP or CHP Site Safety Officer + actions based on assessment of Stressors A, B, C, and E
	D. Totals												
E. Emotional Stress	Potential for Encountering Casualties (wounded or deceased)	4	Unlikely		Some potential but unusual		Very Likely		Probably will encounter			0 - 6	No Action
												7 -12	Employee Assistance Program (EAP) Counseling Available + actions based on assessment of Stressors A, B, C, and D
	Potential for Encountering Casualties (those who have lost relatives, friends, property, pets, etc.)	2	Unlikely		Some potential but unusual		Very Likely		Probably will encounter			13 - 18	CISM or Resilience Counselors visit frequently + actions based on assessment of A, B, C, and D
												19 +	CISM or Resilience Counselors on-site + actions based on assessment of Stressors A, B, C, and D
	E. Totals												

Document ID: 0.7.19.1363.1

Appendix B: Potential Controls for Mitigating Fatigue Risk Factors

The following lists identifies suggested controls that may be used to reduce fatigue risk factors, including: educating disaster workers to recognize the signs and symptoms of fatigue, limiting work shift durations, including rest breaks, increasing recovery time, reducing drive time to/from site, providing recreational resources, and conveniently locating and designing base camps for optimal recovery. These methods should be used in combination to modify work schedules and improve off-hour living conditions.

As discussed, site conditions and operations will vary among incidents, as will the resulting fatigue risk factors and the contribution of each factor to the overall fatigue risk. Once an organization has evaluated the risk factors using a tool such as the Risk Management Assessment Tool, it is in a better position to select the work practices, policies, and resources needed to address the most significant risk factors. Different patterns of work and variations in workload will impact cumulative fatigue over a single shift and throughout a work rotation. In some cases, a single control, such as limiting work shifts to 10 hours, will be feasible. In other cases a combination of controls, such as monitoring for fatigue signs and symptoms, providing transportation services, including rest breaks, and rotating workers through jobs during a work shift, may be used to offset the physical demands of the task and an operational need to operate using 12-hour shifts.

Educational Topics

- Health Impacts, Signs, and Symptoms of Fatigue
- Strategies for Preventing Fatigue during Disaster Operations
- Recognizing Operational Fatigue and Stress in Employee (training for supervisors)
- Common Fatigue Risk Factors during Disaster Operations
- Information on Organization's Employee Assistance Program
- Tips/Checklist on Preparing for Deployment to a Disaster Site – Personnel and Supervisors
- Information for Disaster Workers and their Families on what to expect during deployments (http://www.osha.gov/SLTC/emergencypreparedness/resilience_resources/predeployment.html)
- Work Zone Safety and Defensive Driving Techniques
- Sleeping Strategies for Night-shift Workers
- Critical Incident Stress Management Team and Employee Assistance Program services availability
- Information on organizations' policies and procedures related to work hours and rest periods
- Job Aid providing clearly defined job tasks and duties
- Pre-deployment training, resources, and other tools covering listed topics for employees and for supervisors
- Site orientations, daily briefings, and safety meeting(s) that review fatigue related information (signs, symptoms, prevention) and reinforce reporting of signs/symptoms to supervision or health care providers

Advance Planning

- Approved list of hotels that have fitness facilities, continental breakfast, and dining facilities;
- Contracts with transportation services for shuttling employees to/from job sites
- Helpful checklists of personal preparedness tasks for personnel likely to deploy
- Preassembled "go-kits" with PPE and other equipment for shipment when deployed
- Mobile trailer outfitted as office space for deployment with personnel
- Reasonable estimate of resource needs (equipment and personnel) to support disaster deployment for duration and breadth anticipated
- Information for responders and their families on what to expect during deployments: (http://www.osha.gov/SLTC/emergencypreparedness/resilience_resources/predeployment.html)

Document ID: 0.7.19.1363.1

- Mechanism for reporting fatigue (self, co-worker)
- Existing employment/medical screening programs include evaluation for likely disaster conditions/operations

Work Hours and Rest Periods

- Criteria for setting a maximum work shift duration or minimum amount of time off during a 24-hour period (e.g., 10 hours rest time in a 24-hour time period, with as much of that in consecutive hours as possible)
- Consideration for how work shift duration may change based on the use of controls to mitigate fatigue (e.g., use of transportation)
- Time off between work rotations (e.g., 48 hours off after 14 consecutive days of work.)
- Rest breaks throughout a work shift to address fatigue, PPE limitations, and/or temperature extremes (heat and cold-related illnesses)
- Rotation of personnel during longer shifts requiring strenuous and/or detailed tasks
- Scheduling day/night shift rotations to reduce fatigue (e.g., clockwise rotation with several days off before new shift assigned)
- Limiting early morning shift start times (e.g., before 6:00 am)
- Procedures for monitoring personnel for fatigue signs/symptoms
- Procedures for enforcing work/rest and rotation schedules for employees and supervisors
- Provisions (e.g., job rotation, extended lunch/breaks, additional time off) for personnel and crews exhibiting signs/symptoms of fatigue
- Mechanism for employees to request additional time off and encouragement to do so when experiencing signs/symptoms of fatigue

Transportation and Living Conditions

- Transportation service or an assigned staff member as the "designated driver" to shuttle personnel to/from the site
- Food service at staging areas and base camps; storage/cooking utilities for personnel with special diets
- Use of hotels/motels with access to recreational facilities and dining facilities
- Separation of day and night shift sleeping areas and provision of areas for socializing in base camps
- Reimbursement for personal calls to home during deployment
- Scheduling complex/hazardous tasks for periods of higher alertness
- Lighting for night-shift operations
- Provision of security for base camp and night-time operations
- Encouraging family visits during rest periods/off-hours once the affected area is stabilized

Recuperation Provisions and Health Care Services

- Subsidized health club memberships at local facilities
- Encouraging visits by family members during off-duty hours and time-off.
- Basic recreational equipment included in supplies deployed with personnel
- Incentive programs and other forms of positive reinforcement
- Employee Assistance Program (EAP) and other health services at base camps and staging areas; access to these services during off-hours (in-person or via telephone)

Document ID: 0.7.19.1363.1

Appendix C: Sample Incident-Specific Fatigue Management Plan

Incident Name: New Madrid Earthquake

Location: New Madrid, MO

IC/UC Personnel:

- **Incident Commander – Mary Jones**
- **Deputy Incident Commander – Bob Smith**
- **Safety Officer – Joe Johnson**
- **Public Information Officer – Peggy Greene**
- **Liaison Officer – Larry Brown**
- **Operations – Ken Jackson**
- **Planning – Betty Baxter**
- **Logistics – Joan Black**
- **Finance – Brian Clark**

Description of Event & Site Conditions:

- The incident is a massive earthquake that occurred two weeks ago and affected a 3,000 square-mile area in three states, resulting in major destruction to the infrastructure.
- Lifesaving operations have ended, and there is an urgent need to begin rebuilding the destroyed infrastructure.
- Airports and railroad facilities are still inoperable and major highways as well as many smaller roads are still impassible. Work groups will be transported via helicopter wherever roads are inadequate.
- There is major structural damage of buildings, and those that are habitable are being used to care for the injured and homeless. Workers will have to carry in their own shelters.
- There is no potable drinking water, and public waste disposal systems are still inoperable. Drinking water supplies will be carried in, and sanitation needs will likely initially be port-a-jons.
- Communications in the area all have been disrupted.
- Work groups will deploy for 3-week periods.
- Although the response has moved to the post-rescue phase, workers can expect to see scenes of extreme destruction that may be emotionally disturbing to many.

Fatigue Risk Factors Present:

- **Work Hours & Rest Periods –**
  - Long work hours – possibility of 12+ hour days initially.
  - 3-week deployment, with no time off.
- **Living Conditions –**
  - No housing available – responders will be sleeping in tents; limited sanitation facilities available initially.
  - Food initially will likely be military style “meals ready to eat.”
  - Communications will be difficult; power lines and cell phone towers are still down; responders will be out of touch with families initially.
  - Community has been totally devastated; few buildings left standing.
- **Nature of Work –**
  - Begin assessing hazardous materials situation. Specific assignments will be made on site

Document ID: 0.7.19.1363.1

- **Management & Administrative Support –**
  - Administrative support will be lacking initially.
- **Emotional Stress –**
  - Personnel may be exposed to scenes of major and widespread destruction and a severely affected population, which may have emotional or psychological consequences.
  - Because of the lack of communication infrastructure, workers will not be able to contact family/friends, so normal systems will not be available.

Controls to Be Implemented:

- **Education –** Fact Sheets on preparing for this deployment and what workers should bring with them.
- **Advance Planning –** The advance Incident Management Team (IMT) has already deployed and is initiating readiness for incoming responders. Sleeping and mess tents and latrine facilities are being set up.
- **Work Hours and Rest Periods –** During this phase of the incident, workers will be working 12+ hours/day (which may not include commuting time, depending on the location). Efforts will be made to provide a minimum of eight consecutive hours off for rest. Work hours will be tracked daily and the Safety Officer will coordinate with the Logistics Section to ensure that personnel are provided 48 hours off after each 21-day work rotation.
- **Transportation –** Because of the damage to road and highway systems and shortage of gasoline in the affected area, efforts are being made to reduce the number of vehicles needing gasoline. When practical, vans will be used to transport work teams, which also will help to reduce potential driver fatigue. This may also reduce the likelihood of accidents due to fatigued drivers. Where roads are inadequate, helicopters will transport disaster work groups with their equipment to their work areas.
- **Living Conditions** – Be prepared for considerably less privacy than one normally has. Initially, disaster workers will be living in a tent city, which means that there will be a minimum of privacy.
  - Meals will be served in a food area.
  - As soon as water is available, shower tents and laundry tents will be set up.
- **Recuperation Provisions –** Initially, because of the devastation, no formal recreation facilities will be available. Workers should bring easy-to-carry recreational materials with them (e.g., playing cards, balls, and/or strength bands).
- **Health Care Services –** The advance IMT has set up a medical tent staffed by Public Health Service personnel.
  - Representatives of the organization's Critical Incident Stress Management Team also are on site to assist with stress-related issues.

Evaluation Schedule:

- The effectiveness of the organization's fatigue reduction policies and procedures will be reviewed on a daily basis and modified as needed.
- At the end of the response, a hot wash will be conducted. Comments will be incorporated into an after action report and integrated into organizational policies and procedures for use during future responses.

Document ID: 0.7.19.1363.1

Appendix: D Completed Risk Assessment Tool

Appendix D is an example of the Evaluation Tool completed for this scenario.

Using the Assessment Tool, our risk factors and stressors are:

A: Time – 12 + hours per day (1X4=4), 7 days per week (2X4=8) for 3 weeks without a break (3x2=6. Total score for Time Risk factor = 4+ 8 + 6 = 18.

B: Living Conditions – Make shift shelter (1X4 =4); Mass Dining Facilities (1X 3 = 3); Makeshift Sanitation (1X3=3); and no recreation available (1X4=4). Total score for Living Conditions Risk Factor Assessment = 4 + 3 + 3 + 4 = 14

C: Nature of Work – Disaster (2X2=4); Field work (1X4=4); Level B (3X3=9); Day Shift (4X1=4). During this phase of a response to a disaster of this magnitude, security would be limited (3x4 = 12). The first wave of disaster workers are generally going to be familiar with the area and ER work, so we can assume they would be moderately familiar with the area (2X2=4) and moderately familiar with ER work (4X2=8). Total score for the Nature of Work Risk Factor Assessment = 4 + 4 + 9 + 4 + 12 + 4 + 8 = 45

D: Site Conditions – Likely to encounter uncontrolled single and multiple uncontrolled chemical situations so, single uncontrolled chemicals (1X4=4) and multiple uncontrolled chemicals (2X4=8). Potential for encountering radiation sources is probable, levels > 100 mrem/hr - < 5 REM/yr (4X2=8). Other WMD may not be intentionally released but given the scope of this incident the potential to encounter explosives, disease, etc. as in a WMD event would be highly likely (4X4=16) Total score for Site Conditions Risk Factor Assessment = 4 + 8 + 8 + 16 = 36.

E: Emotional Stress – In this instance, even in the post-rescue phase, disaster workers will have potential for encountering remains from impacted graveyards, morgues, funeral homes or casualties of the event (4X3+12) and will be affected by the devastation and. (2X3=6). Total score for emotional stress Risk Factor Assessment = 12 + 6 =18.

Based on the scores for the individual risk factors assessments, controls would be:

- **Time – Risk Score 18 = Develop a site specific fatigue management plan as part of HASP (AHA) as well as actions based on assessment of Stressors B-E.**
- **Living Conditions – Risk Score 14 = implement the Pre-approved Living Condition Management Plan portion of the Organization's Fatigue Management, as well as actions based on assessment of Stressors A, C, D or E.**
- **Nature of Work – Risk Score 45 = Site Specific Management Plan for nature of work to include a security plan as well as plan based on assessment of Stressors A, B, D, or E.**
- **Site Conditions – Risk Score 36 = APP + HAZWOPER SSHP CIH, CSP or CHP Site Safety Officer as well as actions based on assessment of Stressors A, B, C, and E.**
- **Emotional Stress – Risk Score 18 = CISM or Resilience Counselors visit frequently as well as actions based on assessment of Stressors A, B, C, and D.**

Document ID: 0.7.19.1363.1

Appendix: D Completed Risk Assessment Tool

Based on this evaluation, this Organization would be implementing their Organizational Fatigue Management Plans as related to Living Conditions and Site Conditions, and a Site- or Response-specific Fatigue Management Plan based on scores for Time Stress, Nature of Work Stress, and Emotional Stress would be incorporated into HASPs.

Document ID: 0.7.19.1363.1

Appendix: D Completed Risk Assessment Tool

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Risk Factor	Stressor	Weight Factor ↓	Exposure Factor 1		Exposure Factor 2		Exposure Factor 3		Exposure Factor 4		Total	Risk #	Corrective Action Plan
A. Time	Long Hours	1	≤ 8 hrs/day		> 8 < 10 hrs /day		> 10 <12 hrs/day		12 hrs/day	x	4	0 - 6	No action (unless required by assessment of Stressors B-E)
	Extended Time/Week	2	≤ 40 hrs/wk		> 40 < 50 hrs/wk		> 50 < 72 hrs/wk		> 72 hrs/wk	x	8	7 - 12	Increase awareness + actions based on assessment of Stressors B-E
	Extended Weeks Without A Full Day Off	3	2 weeks		3 weeks	x	4 weeks		> 4 weeks		6	13 - 18	Develop fatigue management plan as part of HASP (AHA) + actions based on assessment of Stressors B-E
												19 - 24	Implement pre-approved fatigue management plan + actions based on assessment of Stressors B-E
	A. Totals										18		
B. Living Conditions	Quarters	1	Home		Typical Business Travel		RVs		Makeshift Shelter	x	4	0 - 8	No action unless assessment of Stressors A, C, D or E indicates need
	Food	1	Home		Typical Business Travel		Mass Dining Facilities	x	Improvised		3	8 -12	Increase awareness and monitoring by managers, address in separate AHA or actions based on assessment of Stressors A, C, D or E
	Sanitation	1	Home		Typical Business Travel		Mass Washing Facilities	x	Improvised		3	12 - 16	Address in Pre-approved Living Condition Management Plan or actions based on assessment of Stressors A, C, D or E
	Recreation/ Leisure Opportunities	1	Home		Typical Business Travel		Limited		None	x	4		
	B. Totals										14		
C. Nature of Work	Phase	2	Demobilization/ Report Writing		Recovery	x	Response		Rescue		4	0 - 16	No Action unless assessment of Stressors A, B, D or E indicates need
	Activity	1	Office Admin		Front Line Admin (MASH)		Field Oversight		Field Worker	x	4	17 - 32	Increase awareness, address in separate AHA or actions based on assessment of Stressors A, B, D or E
	Level of Protection	3	Level D		Modified Level D/C		Level B	x	Level A		9		
	Shift Work	4	Normal Day	x	Normal night		Swing		12am:12pm; 12pm;12am		4	33 - 48	Site Specific Management Plan for nature of work to include a security plan + plans based on assessment of Stressors A, B, D or E
	Security	4	Normal Day		Normal Night		Limited	x	Sporadic		12	49+	Address in Pre-approved Management Plan for nature of work + plan based on assessment of Stressors A, B, D or E
	Familiarity with Area	2	High		Moderate	x	Slight		None		4		
	Familiarity with ER Work	4	High		Moderate	x	Little		Training Only		8		
	C. Totals										45		
D. Site Conditions	Chemical	1	Controlled		Controlled and Predictable		Controlled but Unpredictable		Uncontrolled	x	4	0 - 11	Accident Prevention Plan (APP) + actions based on assessment of Stressors A, B, C and E
	Multi-chemical	2	Controlled		Controlled and Predictable		Controlled but Unpredictable		Uncontrolled	x	8	12 - 22	APP + HAZWOPER SSHP + actions based on assessment of Stressor A, B, C and E
	Ionizing Radiation	4	Background (BKG)		> BKG < 100 mrem/hr	x	> 100 mrem/hr < 5 rem/yr		> 5 rem/yr		8	23 - 33	APP + HAZWOPER SSHP CIH, CSP or CHP Program Manager + actions based on assessment of Stressors A, B, C and E
	Other WMD	4	None		Potential		Known Levels		Unknown Levels	x	16	34 +	APP + HAZWOPER SSHP CIH, CSP or CHP Site Safety Officer + actions based on assessment of Stressors A, B, C and E
	D. Totals										36		
E. Emotional Stress	Potential for Encountering Casualties (wounded or deceased)	4	Unlikely		Some potential but unusual		Very Likely	x	Probably will encounter		12	0 - 6	No Action
												7 -12	EAP Counseling Available + actions based on assessment of Stressors A, B, C and D
	Potential for Encountering Casualties (those who have lost relatives, friends, property, pets, etc.)	2	Unlikely		Some potential but unusual		Very Likely	x	Probably will encounter		6	13 - 18	CISM or Resilience Counselors visit frequently + actions based on assessment of A, B, C and D
												19 +	CISM or Resilience Counselors on-site + actions based on assessment of Stressors A, B, C and D
	E. Totals										18		

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NRT

Volume II

Guidance for Managing Worker Fatigue During Disaster Operations

Background Document

April 30, 2009

THE NATIONAL RESPONSE TEAM

Document ID: 0.7.19.1363.1

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Acknowledgement

The National Response Team (NRT) acknowledges the NRT member agencies, and state and Federal agencies participating on the Regional Response Teams (RRTs), for their contributions in preparing this document. We invite comments or concerns on the usefulness of this document in all-hazard planning for responses. Please send comments to:

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Document ID: 0.7.19.1363.1

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Table of Contents

1.0 Executive Summary..... 6

2.0 Introduction and Scope..... 8

3.0 Background Information..... 8

3.1 Site Conditions and Other Potential Hazards..... 9

3.1.1 Phase of Disaster Operations..... 9

3.1.2 Exposure to a Wide Range of Health and Safety Hazards..... 10

3.1.3 Exposure to Multiple Agents Simultaneously 10

3.1.4 Personal Protective Equipment (PPE) Use..... 11

3.1.5 Shift Work..... 11

3.1.6 Psychological Impacts..... 11

3.1.7 Use of Skilled Personnel that are not Traditional Disaster Workers ……12

3.1.8 Temporary Living Conditions and Other Considerations..... 12

4.0 Highlights of Research on Extended Hours..... 12

5.0 Existing Regulations and Work Practices..... 14

6.0 Conclusion 16

Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations.....A-1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations..... B-1

Appendix C: References.....C-1

Table 1: Association between Working Extended Work Shifts/Work Weeks and Workplace Injury: Summary of Reviewed Literature C-1

Table 2: Summary of Literature and Bibliography..... C-4

Document ID: 0.7.19.1363.1

1.0 Executive Summary

This document is the second of two documents created by the National Response Team (NRT) to address worker fatigue during large-scale disaster operations, such as those following the Oklahoma City bombing, the 9-11 attacks, anthrax contamination, the Columbia Space Shuttle Recovery, and Hurricanes Katrina, Rita, and Wilma. This document summarizes the essential information compiled and reviewed by the NRT while developing the recommended fatigue management approach detailed in *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance Document (Fatigue Technical Assistance Document).* This Background Document discusses many of the issues and challenges that may arise during a large-scale disaster and how they may impact worker fatigue. It also summarizes current literature on the effects of working extended work shifts/work weeks and the practices used by federal agencies and other organizations to control them.

After a large-scale disaster, workers often work longer shifts and more consecutive shifts than they would typically work during a traditional 40-hour work week. The fatigue and stress that may arise from strenuous work schedules can be compounded by the hazards and impediments created by the physical and environmental conditions in the affected area after a disaster: non-existent, damaged, or limited critical infrastructure (roads/traffic signals, utilities, transportation/distribution of basic necessities, etc.); downed power and communication lines; vegetative, construction, and hazardous debris; flooding; and hazardous material releases.

Available literature does not provide extensive findings about how strenuous work schedules combine with the unique hazards and exposures associated with disaster operations to impact worker fatigue. Although existing literature generally focuses on the effect of shift work and/or extended work hours on employees working normal, non-disaster-related employment, it is the best available information at this time. For example:

- Numerous studies indicate that accident rates tend to increase when work shifts extend beyond 12 hours per day or 60 hours per week. (Folkard & Lombardi, 2006, 2004; Dong, 2005; Barger, et al, 2005; Editorial, 2005; Dembe, 2005; Caruso, et al, 2004; Feyer 2001; Horne & Rayner, 1999.)
- A recent study (Allen, Slavin & Bunn, 2007) acknowledges the findings of Dembe (2005) and cautioned that additional factors, such as the characteristics of the employee (e.g., age, gender, and prior health problems) and the type of work, should be considered when characterizing the risk of injury/illness.
- Sleep deficits, particularly when they accumulate over a period of time, may lead to performance deficiencies, as well as contribute to increased accident and injury rates. (Fryer, 2006; Johnson, 2006; Dahlgren, et al, 2005; Belenky, 1997; Jones & Smith, 1992; OTA, 1991.)
- The longer and more stressful the work shift/week, the greater the need for recuperative time off. (Sonnentag & Zijlstra, 2006; Johnson, 2006; Totterdell, et al, 1995; USDA/Forest Service.)
- Numerous studies identify the effectiveness of regular rest breaks, particularly during long work days. (Baxter & Kroll-Smith, 2005; Dong, 2005; Dembe, 2005; Jackson, et al, 2004; Tucker, et al, 2003.)

Document ID: 0.7.19.1363.1

- Several articles identify the negative effects of night shifts and/or extended work hours on family relationships. (Pressler, 2000; ACTU, 2000; White & Keith, 1990.)

Multiple agencies and organizations have recognized the potential effects of fatigue in the workplace and enacted regulations or developed voluntary guidelines and operating practices to address some of the fatigue risk factors mentioned above. Most focus on reducing long work hours to address worker fatigue, maintain alertness and productivity, and reduce fatigue-related accidents and injuries for employees who are performing routine tasks/operations in a controlled environment. While this approach may be appropriate for employees who are performing routine tasks/operations in a controlled environment, it does not address the full range of fatigue risk factors that are likely to be associated with disaster operations.

Because of the broad variety of activities in which disaster workers may be engaged, as well as the widely varying circumstances in which they may be working, the NRT recognizes that there is no simple solution or one-size fits all approach to dealing with disaster worker fatigue issues. Instead, the NRT recommends an approach that will assist organizations with the development of their own fatigue management efforts specifically targeted at the nature of their activities and the needs of their workers. This approach, which is detailed in *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance Document,* involves developing an overall **organizational fatigue management program** and, at the time of an incident, an **incident-specific fatigue management plan:**

- The **organizational fatigue management program** identifies the range of disaster operations, site conditions, and risk factors that employees may experience and provides the overall strategy, work practices, and other controls (including those addressing length of work shift and work rotation) that the organization may use to reduce incident-related fatigue.

- The **incident-specific fatigue management plan** describes the nature of the incident and incident conditions, lays out the risk factors and control measures for a specific incident, and identifies the evaluation schedule.

Document ID: 0.7.19.1363.1

2.0 Introduction and Scope

Disaster personnel often work extended work hours in stressful environments, which can lead to added fatigue and injuries. Disaster workers are also exposed to a wide variety of chemical, physical, and mental stressors, potentially compounding the stress and fatigue created by working strenuous work schedules. Although the relationship between length of work shift/work week, fatigue, and workplace injury has been examined in peer reviewed literature, and several industry sectors have established regulations and guidelines to address the hazards, there are limited data and few resources addressing worker fatigue during disaster operations. Experience from large-scale disaster operations, such those following the Oklahoma City bombing, the 9-11 attacks, anthrax contamination, the Columbia Space Shuttle Recovery, and Hurricanes Katrina, Rita, and Wilma, prompted the NRT members to examine the potentially detrimental health and safety effects associated with working extended work hours and work rotations.

This Background Document discusses many of the issues and challenges that may arise during a large-scale disaster and how they may impact worker fatigue (Section 3.0). It also summarizes current literature on the effects of working extended work shifts/work weeks and the practices used by federal agencies and other organizations to reduce the risks to workers (Section 4.0). This Background Document should be used in conjunction with the NRT's *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance* to better understand the roots of the **organizational fatigue management program** and the **incident-specific fatigue management plan** recommended therein.

The hazards associated with extended work shifts, work weeks, and work rotations should be evaluated and addressed during all phases of an incident. However, the information in this document and in *Volume I* is most applicable following the completion of the initial emergency operations.

3.0 Background Information

Operations after a large-scale disaster often necessitate that workers work longer shifts and more consecutive shifts than they would typically work during a traditional 40-hour work week. For the purposes of this document, extended work shifts are shifts that extend beyond a traditional 8- or 10-hour work day. This document also addresses extended work weeks or rotations, in which workers may work successive shifts beyond a more traditional 5-day work week.

Extended work shifts can be a contributing factor in creating and/or exacerbating health impacts caused by hazardous working conditions at a disaster site. The most evident effects associated with working extended workdays are sleep loss, fatigue, stress, and prolonged exposure to chemicals and other hazards (Harrington, 2001). Fatigue and stress may also increase the risk of other accidents, injuries, and illnesses in the workplace. In a recent report, the National Institute of Occupational Safety and Health (NIOSH) concluded that "a pattern of deteriorating performance on psychophysiological tests as well as injuries while working long hours was observed across study findings, particularly with very long shifts and when 12-hour shifts combined with more than 40 hours of work a week." (Caruso, et. al, 2004.) These findings suggest that employees working longer shifts combined with longer work weeks, which are

Document ID: 0.7.19.1363.1

typical during disaster work, may be at a higher risk of injury and reduced performance due to fatigue.

3.1 Site Conditions and Other Potential Hazards

Disasters create uniquely challenging physical and environmental conditions for workers, including: non-existent, damaged, or limited critical infrastructure (roads/traffic signals, utilities, transportation/distribution of basic necessities, etc.); downed power and communication lines; vegetative, construction, and hazardous debris; flooding; hazardous material releases; limited temporary housing (for victims and workers); and damaged or collapsed commercial structures and homes. In addition to these conditions, the volume of resources needed to restore the area after a large-scale disaster will likely exceed those available in the affected communities. Resources, including workers, will need to be brought in from outside the local area, creating a host of logistical issues (e.g., locating, staging, and housing goods and workers; credentialing for out-of-state professionals; and training critical skilled workers unfamiliar with disaster work). These site conditions and circumstances affect workers' physiological capabilities, influencing their performance and impacting their safety and health decision-making.

The following subsections highlight some of the hazards and challenges that the Incident Commander/Unified Command (IC/UC), Incident Safety Officer, and other incident decision makers may confront when addressing worker fatigue and implementing the approach outlined in *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance Document*. NIOSH identifies very similar issues as challenges to safety and health management as a whole during large-scale disasters in the report *Protecting Emergency Responders: Safety Management in Disaster and Terrorism Response*. The following subsections provide brief summaries; a detailed accounting of each topic is included in Appendix A.

3.1.1 Phase of Disaster Operations

Operations, resources, and site conditions change throughout the response to a disaster. During rescue operations, decisions and actions are time sensitive. Site conditions are often uncontrolled and may change rapidly, as in the case of a fire, explosion, or hazardous substance release. Responders and response equipment may be limited and options for controlling exposures to emergency responders may be restricted by these limitations. During this phase of an operation, the risks to emergency responders are often balanced against the very real need to protect the public, control the emergency, and save lives. Emergency response personnel may be acclimated to this intense activity, the higher level of personal protective equipment (PPE), and alternative work practices required; they are familiar with the site conditions that frequently exist in the immediate aftermath of an incident.

Once the IC/UC declares the initial rescue phase over or complete and the immediate threat has been stabilized, operations move into the next phase. As this transition occurs, risk-benefit decision making must similarly shift to reduce the level of unnecessary risk to workers. Reliance on extended work shifts, work weeks, and work rotations should be reevaluated; the fatigue risk factors should be assessed; and the applicable fatigue management recommendations in *Volume I*

Document ID: 0.7.19.1363.1

Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance Document Section 2.0 should be implemented.

3.1.2 Exposure to a Wide Range of Health and Safety Hazards

Conditions after a disaster can create additional risk for many reasons, including the loss of basic infrastructure (e.g., power, roads, water, and food/hotel services), the large amount of debris in roads and work areas, the large number of workers who are not familiar with the area, and the volume and wide range of operations conducted at close proximity to one another. These conditions may result in exposure to chemicals (e.g., silica and asbestos from collapsed building materials; carbon monoxide from generators; oil, gasoline, and other hazardous materials from storage tanks or chemical facilities), heat/cold stress, contact with contaminated water, noise, falls from elevated surfaces, electrocution risks, fires/explosions, motor vehicle accidents, and confined space entry hazards.

Skilled support personnel (SSP) who become involved in disaster operations are often familiar with the hazards of their jobs under normal work conditions, but may not be familiar with the additional hazards posed by disaster conditions. In addition, the PPE and other exposure controls routinely used to perform their jobs under normal work conditions may need to be augmented to provide adequate protection under disaster conditions. This may require modification to work practices, additional training, and medical monitoring.

Workers at a disaster site often come from communities outside the disaster area and may be unfamiliar with it. This can create challenges in navigating the disaster area, particularly if road signs and traffic lights were destroyed during the disaster. It also poses challenges to understanding the risks associated with indigenous plants and animals. Workers may also be assigned work tasks for which they have minimal or no training. The unfamiliarity factor is similar to hiring a new employee for a job; the greatest chance for an accident occurring is during the first 6 to 12 months.

3.1.3 Exposure to Multiple Agents Simultaneously

Disasters like the World Trade Center, where many different agents are mixing in the workers' breathing zone, pose great challenges for establishing acceptable exposure criteria, given the real possibility of synergistic effects. All of the Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values are established for single chemical exposures with an underlying assumption that employees will recover for 16 hours before being re-exposed. This assumption normally is not representative of the conditions at a disaster site.

Document ID: 0.7.19.1363.1

3.1.4 Personal Protective Equipment (PPE) Use

Most PPE and the organizational operating procedures for employee use are not designed for multiple hazards and prolonged periods of use. The selection and use of PPE may need to be adjusted to provide adequate protection during disaster operations when site hazards are varied and work shifts are extended. For example, a cartridge change schedule designed for routine use during a standard 8-hour shift will need to be reevaluated for use during a 12-hour shift (assuming the same level of exposure). If exposures are anticipated to be higher during the extended period and/or additional chemicals will be present, respirator cartridges may need to be changed more frequently, a different set of cartridges may be necessary, or a more protective respirator may be required. Similar adjustments may be necessary for other types of PPE, particularly chemical protective clothing. Additionally, PPE use and, in particular, the use of respiratory protection, poses a physiological burden under normal working conditions during traditional working hours. This burden will likely be increased if the PPE or respiratory protection is used for extended work shifts/rotations.

3.1.5 Shift Work

Shift work may be used during large-scale disaster operations to address time-critical operations. It may also be combined with extended hours. Shift work can make employees tired and sleepy. Being excessively tired increases the possibility of errors and accidents. The stress of shift work can also have health effects, such as digestive disorders or aggravating heart disease. Working at night makes it difficult to get enough sleep. Sleep after night work is usually shorter and less refreshing or satisfying than sleep during normal night time hours. Body and brain functions slow down during the night time and early morning hours. The combination of sleep loss and working during the body's low point can cause excessive fatigue and sleepiness. This makes it more difficult to perform well, which increases the risk of accidents. Frequent rotations between day and night shifts can further fatigue employees and the separation from family and friends can add additional stress. These stresses can be harmful to health (Plain Language About Shiftwork, DHHS (NIOSH) Publication No. 1997-145).

3.1.6 Psychological Impacts

Responders can be exposed to a variety of experiences that may potentially cause psychological and emotional effects. Job demands and fatigue can exacerbate these effects and intensify the need for recovery periods. Whether workers are dealing with natural disasters, technological disasters, or terrorist events, they may experience fear, anxiety, grief, and guilt. They may become extremely irritable and/or emotional, experience mood swings, and have memory problems. Persistent and severe reactions may lead to posttraumatic stress disorder (PTSD). For example, approximately 20% of the 1,138 World Trade Center disaster workers studied by the Centers for Disease Control and Prevention (CDC) met the symptom threshold for PTSD (CDC, 2004).

Document ID: 0.7.19.1363.1

3.1.7 Use of Skilled Personnel that are not Traditional Disaster Workers

Heavy equipment operators and other construction trade workers who are called into a disaster operation often have limited experience with performing routine tasks under disaster conditions and working typical disaster work schedules. They generally are unfamiliar with the physical, chemical, and psychological stressors routinely encountered during disaster operations. They may have limited or no training about the physical and chemical hazards present at a specific disaster site, the work practices, and the PPE used for protection. In addition, they may not be prepared for the nature of their working or living conditions while deployed. OSHA has created the Disaster Site Worker training course specifically to address the vulnerabilities of construction workers during disaster response operations. Information about this course is available at: http://www.osha.gov/fso/ote/training/disaster/disaster.html.

3.1.8 Temporary Living Conditions and Other Considerations

- Use of Base Camps for Temporary Housing: workers may have to deal with primitive, communal living conditions in spaces that were not originally designed as living quarters. They may have to share sleeping and bathroom facilities. This can be stressful in itself, but may be even more difficult when the other workers are not on the same work schedules. In addition, temporary housing usually has very limited facilities for recreational activities, and may not have food service or amenities for preparing and storing food.

- Potential for long travel times to and from work site and base camp or other temporary living spaces: Long travel times further reduce the amount of time a worker has to relax, sleep, and recover after a work shift, which increases the risk of worker fatigue. It also may increase a worker's risk of an automobile accident. According to a 2002 National Transportation Safety Board press release, research shows that about 100,000 crashes per year involve "drowsy driving" and 1,500 (1.5 percent) of those crashes are fatal.

- Medical Considerations: Medical sources indicate that in situations where personnel are under stress and tired, the risk of staphylococcus or other infections increases as the body's immune system is compromised. Additionally, psychological stress has been demonstrated to delay wound healing and decrease immune/inflammatory responses required for normal bacterial clearance.

4.0 Highlights of Research on Extended Hours

Although a significant amount of literature was reviewed as part of this effort, only one document actually focused on the safety and health needs of responders and disaster workers: *Protecting Emergency Responders: Volume 3: Safety Management in Disaster and Terrorism Response* (Jackson, et. al., 2004). The subject of disaster operational work hours was touched on only briefly under the topic of response sustainability in this joint RAND/NIOSH report. All of the other documents reviewed focused on the effect of shift work and/or extended work hours on employees working normal, non-disaster-related employment. More scientific evaluation is needed to understand and address the effects of both extended work hours and shift work for

Document ID: 0.7.19.1363.1

emergency responders and disaster workers, particularly in the case of extended duration operations, such as those associated with the 2005 hurricanes and the World Trade Center and Pentagon attacks.

A review of the literature on the effects of shift work and extended work hours suggests that the following findings should be considered by the IC/UC, Incident Safety Officers, and other incident management decision makers during the planning and development of incident-specific policies regarding extended work hours for disaster workers:

- Numerous studies indicate that accident rates tend to increase when work shifts extend beyond 12 hours per day or 60 hours per week. (Folkard & Lombardi, 2006, 2004; Dong, 2005; Barger, et al, 2005; Editorial, 2005; Dembe, 2005; Caruso, et al, 2004; Feyer, 2001; Horne & Rayner, 1999.)
    1. According to Dr. Charles A. Czeisler, Professor of Sleep Medicine at Harvard Medical School, people who go without sleep for 24 hours or who sleep only four or five hours a night for a week are impaired at the equivalent of a blood alcohol level of 0.1% - which is the equivalent of being legally drunk (Fryer, 2006).
    2. In an effort to model the effect of the components of long work hours on injuries and accidents, researchers found that "risk increased in an approximately exponential fashion with time on shift such that it was more than doubled in the 12^{th} hour relative to the average for the first 8 hours." Thus, if the risk for an 8-hour shift was set at 1, the risk increased to 13% for a 10-hour shift and to 27.5% for a 12-hour shift (Folkard & Lombardi, 2004).
    3. Evaluating risk across three different shifts and using pooled data from five studies, Folkard & Lombardi (2004) reported that "incident risk increased in an approximately linear fashion, with an increased risk of 18.3% on the afternoon shift, and of 30.4% on the night shift, relative to that in the morning shift." Relative risk of incidents over successive night shifts was about 6% higher on the second night, 17% higher on the third night, and 36% higher on the fourth night in comparison to the first night (Folkard & Lombardi, 2004).
    4. Working at least 12 hours per day was associated with a 37% increased risk of injury and working at least 60 hours per week was associated with a 23% increased risk of injury in an analysis of more than 100,000 work records over a 13-year period (Dembe, et al, 2004).
    5. Construction workers working more than 8 hours per day had a 57% higher injury rate than those working 7 or 8 hours per day (Dong, 2005).
    6. Work schedules with both very long shifts and more than 40 hours per week were associated with reduced performance, decreased alertness and cognitive function, and both increased fatigue and injury levels (Caruso, et al, 2004).
- A recent study (Allen, Slavin & Bunn, 2007) acknowledged the findings of Dembe (2005) and cautioned that additional factors such as the characteristics of the employee (e.g., age, gender, and prior health problems) and the type of work should be considered along with the number of hours worked when attempting to assess accident and health risks from extended work hours.

Document ID: 0.7.19.1363.1

- Sleep deficits, particularly when they accumulate over a period of time, can lead to performance deficiencies, as well as contribute to increased accident and injury rates (Fryer, 2006; Johnson, 2006; Dahlgren, et al, 2005; Belenky, 1997; Jones & Smith, 1992; OTA, 1991).
- There can be serious physical and mental health effects from working shifts more than 12 hours a day (Pietroiusti, et al, 2006; Dembe, et al, 2006; Salzman & Belzer, 2006; Caruso, 2004; Liu & Tanaka, 2002; Ettner & Grzywacz, 2001; Harrington, 2001; Kawakami, et al, 1999; Sokejima & Kagamimori, 1998; Sparks, et al, 1997; Tucker, et al, 1996; Sauter, et al, 1990).
- The longer and more stressful the work shift/week, the greater the need for recuperative time off (Sonnentag & Zijlstra, 2006; Johnson, 2006; Totterdell, et al, 1995; USDA/Forest Service).
- Engaging in social activities and/or athletic activities can enhance recovery (Dahlgren, et al, 2005; Fritz & Sonnentag, 2005; Westman & Eden, 1997).
- A study of offshore and onshore oil industry workers found greater job satisfaction among the offshore workers because they had around-the-clock resources available to them (meals, recreation, supervisory support) regardless of what shift they worked in comparison to the onshore workers who worked night shifts (Parkes, 2003).
- Numerous studies identified the effectiveness of regular rest breaks, particularly during long work days (Baxter & Kroll-Smith, 2005; Dong, 2005; Dembe, 2005; Jackson, et al, 2004; Tucker, et al, 2003).
- Several articles identified the negative effects of night shifts and/or extended work hours on family relationships, indicating that some consideration needs to be given to both supporting responders in the field and reaching out to family members (Pressler, 2000; ACTU, 2000; White & Keith, 1990).
- A small laboratory study evaluated the combined effects of work schedule and task factors on upper-extremity fatigue. The study noted that fatigue was observed more quickly with increased time on shift and during night shifts compared with day shifts. (Rosa, Bonnet, & Hale, 1998).

5.0 Existing Regulations and Work Practices

Multiple agencies and organizations have recognized the risk associated with fatigue in the workplace and enacted regulations or developed voluntary guidelines and operating practices to address it. A subset of regulations and guidelines/operating practices is highlighted below; a full discussion of each is presented in Appendix C.

Transportation Industry

Regulations limiting the hours of service and specifying a minimum interval for recovery have been set for the transportation industry:

- Long-haul Truck Drivers: 11 hours of driving time (up to a 14-hour work day) after 10 hours of off-duty time; 60-70 hours per week (7- or 8-day interval) with requirement of 34 hours off before restarting this clock. (49 CFR, Part 395)
- Federal Aviation Administration (FAA) regulations (14 CFR 121.471) impose an eight-hour limit for flight time during a 24-hour period, provided the pilot has at least eight

Document ID: 0.7.19.1363.1

continuous hours of rest during the 24-hour period. The rules do not address the amount of time that the pilot can be on duty (stand-by time).

- Locomotive engineers/railroad signalmen: 8 hours of rest between each shift worked under 12 hours and 10 hours of rest between each shift worked of 12 hours or more. (49 USC §21101 et seq.)

Nuclear Power Industry

The Nuclear Regulatory Commission's (NRC) proposed rule requires standard working hour limits of 16 hours in a 24-hour period, 26 hours in a 48-hour period, and 72 hours in a week, excluding shift turnovers. Breaks of at least 10 hours between shifts, a 24-hour break in any 7 days, and a 48-hour break in any two weeks are required (NRC, SECY-05-0074).

Wildland Firefighting

Firefighters generally plan for and ensure that all personnel are provided a minimum 2:1 work/rest regimen (for every two hours of work or travel, provide one hour of sleep and/or rest) with work shifts that may be up to 16 hours/day. Standard assignment length is 14 days with two mandatory days off following an assignment. The Incident Commander or Agency Administrator must justify work shifts that exceed 16 hours and those that do not meet 2:1 work to rest ratio. (National Wildfire Coordinating Group, Interagency Incident Business Management Handbook, Chapter 10, 2004)

Healthcare Industry

The Accreditation Council for Graduate Medical Education (ACGME) set guidelines limiting on-call activities to 24 consecutive hours (plus six additional hours for continuity of care follow-up) and total weekly hours were limited to 80 hours (ACGME, Common Program Requirements, Resident Duty Hours and Working Environment, 2003). With similar intent, the Committee on the Work Environment for Nurses and Patient Safety recommended that state regulatory bodies prohibit nursing staff from providing patient care in any combination of scheduled shifts, mandatory over-time, or voluntary overtime in excess of 12 hours in any given 24-hour period and in excess of 60 hours per 7-day period. (Committee on the Work Environment for Nurses and Patient Safety. Ed. Page, A. (2004). Keeping Patients Safe: Transforming the Work Environment of Nurses. Washington, D.C.: The National Academies Press)

Recent legislation in the U.S. Congress proposed prohibiting health care facilities from requiring nurses to work more than a scheduled work shift or duty period, more than 12 hours in a 24-hour period, or more than 80 hours in a consecutive 14-day period, absent an emergency declared by Federal, State, or local governments.

Numerous States have enacted bans on mandatory overtime, generally considered more than 40 hours per week, for healthcare workers. The American Nursing Association website identifies fourteen states that currently prohibit the use of mandatory overtime for nurses and fourteen states that introduced similar legislation in 2007. As one example, New Jersey's law covers hourly workers who are involved in direct patient care activities or clinical services and are

Document ID: 0.7.19.1363.1

employed by a health care facility. It states that no health care facility shall require an employee to accept work in excess of an agreed to, predetermined and regularly scheduled daily work shift, not to exceed 40 hours per week. Covered workers may do so voluntarily.

U.S. Coast Guard (USCG)

USCG has developed a "Guide for Managing Crew Endurance Risk Factors" that outlines the steps for implementing a Crew Endurance Management Program. A crew endurance risk assessment is conducted by a crew endurance work group made up of trained personnel in the unit/operation. The risk assessment is conducted for the unit/operation using a standard risk factor assessment form. A crew endurance management plan is then developed for the unit/operations to address the risk factors identified. Risk factors include items such as: less then 7-8 hours of uninterrupted sleep daily, poor sleep quality, main sleep scheduled during the day, work hours exceeding 12 hours, high workload, poor diet, lack of control over work environment, exposure to extreme environmental conditions, no opportunity to exercise, isolation from family. (See Appendix B for addition information.)

U.S. Army Corps of Engineers (USACE)

USACE provides information on work scheduling during disaster operations in its Engineering Manual EM 385-1.1, Safety - Safety and Health Requirements, in Appendix B (Emergency Operations), Paragraph 8 (Duty Schedule). In this document, USACE restricts on-duty hours for operations lasting longer than two weeks as follows:

- 12 hours per day, 7 days per week
- 84 hours per week
- 24 hours rest after 14 days and 48 hours of rest after 21 days (provided, optional to employee)
- 24 hours rest required after 29 days and at least 24 hours required every two weeks thereafter
- Travel time to be minimized; if more than 180 minutes roundtrip, then work hours will be shortened by travel in excess of 180 minutes

6.0 Conclusion

Large-scale disasters create site conditions, hazards, and operations that are unique in their combination, proportion, and duration. To restore a community that has been devastated, workers will often work strenuous work schedules under dangerous conditions (e.g., collapsed building, scattered debris, uncharacterized hazardous substance releases) and with limited access to critical local infrastructure (e.g., communications, power, transportation, etc.). For disaster workers, the relationship between exposure to disaster conditions and strenuous work schedules has not been studied; there is limited data on the resulting impacts to a worker's physiological capabilities and risk of injury. However, available literature focusing on non-disaster workers suggests that working longer hours increases the risk of occupational injuries and accidents and that this risk may be dependent on the nature of the work and the characteristics of the individual worker. It is therefore critical for the NRT and other organizations to proactively address worker fatigue during disaster operations.

Document ID: 0.7.19.1363.1

Multiple agencies and organizations, recognizing the potential effects of fatigue, have enacted regulations or developed voluntary guidelines and operating practices to address it. Most regulations and guidelines set limits on work hours, work weeks, and overtime to address worker fatigue, maintain alertness and productivity, and reduce fatigue-related accidents and injuries. While this approach may be appropriate for employees who are performing routine tasks/operations in a controlled environment, it does not address the full range of fatigue risk factors that are likely to be associated with disaster operations. Fatigue risk factors are more fully discussed in *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance Document* and can include:

- Long work hours
- Insufficient sleep (less than 7-8 hours of uninterrupted sleep)
- Fragmented sleep
- Shift work/rotating shifts/night shift work
- Sleeping during the day
- Sleep debt with no possibility to make-up lost sleep
- Lack of/limited rest breaks
- Physically and mentally demanding work
- Exposure to temperature and other environmental extremes
- Exposure to chemical and physical hazards, particularly if these are in a mixture or are not well characterized
- Use of PPE
- Limited access to recreational/fitness equipment
- Exposure to psychological stressors (e.g., close contact with injured or dead victims)
- Unfamiliar work environment and/or work task/operations
- Temporary or communal living conditions (which may result in insufficient sleep, fragmented sleep, etc.)
- Limited access to nutritious meals
- Travel time to work site

Because of the broad variety of activities in which disaster workers may be engaged, as well as the widely varying circumstances in which they may be working, the NRT recognizes that there is no simple solution or one-size-fits-all approach to dealing with disaster worker fatigue issues. Instead, the NRT is recommending an approach that will assist organizations with the development of their own fatigue management efforts specifically targeted at the nature of their activities and the needs of their workers. This recommendation is detailed in *Volume I Guidance for Managing Worker Fatigue During Disaster Operations: Technical Assistance* and calls for a comprehensive, two-pronged approach:

- Developing an **organizational fatigue management program** that identifies the range of disaster operations, site conditions, and risk factors that employees may experience and provides the overall strategy, work practices, and other controls (including those addressing length of work shift and work rotation) that the organization may use to reduce incident-related fatigue.
- Developing an **incident-specific fatigue management plan** that lays out the risk factors and control measures for a specific incident.

Document ID: 0.7.19.1363.1

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Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations

This appendix provides an expanded discussion of the hazards associated with working extended shifts and work rotations identified in Section 3.0 of the document.

Fatigue

Fatigue can be defined as a state of physical and mental exhaustion that results from overexertion and lack of sleep (USCG, 2004). Signs and symptoms include sleepiness, irritability, depression, giddiness, loss of appetite, digestive problems, and an increased susceptibility to illness, though these symptoms can vary among workers. According to the Department of Transportation's (DOT's) Fatigue Resource Directory, fatigue can be caused by sleep loss and circadian rhythm disruption, and both may be associated with working extended work shifts (DOT).

It is difficult to assess with precision the effects of fatigue on worker safety and health and quantify fatigue's exact contribution to workplace accidents. However, it is known that processes like sleep/wake patterns, body temperature, hormone levels, and digestion are regulated by the body's internal circadian clock over a 24-hour period (DOT). These internal rhythms affect how alert a worker feels and can impact how the worker performs tasks. Fatigued workers may react more slowly, fail to respond or respond incorrectly, and show poor logic or judgment. Fatigued workers are also less able to concentrate, and may be less motivated and more forgetful (Alberta Human Resources and Employment, 2004; Elliot and Kuehl, 2007).

Performance is best when the body is alert and the internal body activity is high. During the normal day-work, night-sleep pattern, people work when the circadian rhythm is high and sleep when it is low (Rosa, 1997). This schedule is best for performance and for a worker's safety. When employees work extended hours they may be working during hours that their internal circadian rhythm is low, potentially impairing their performance (Harrington, 2001; Rosa, 1997).

The DOT's *Fatigue Resource Directory* indicates that extreme fatigue can cause uncontrolled and involuntary shutdown of the brain, and an individual who is extremely sleepy can lapse into sleep at anytime despite the potential consequences (DOT). According to a 2002 National Transportation Safety Board press release, research shows that about 100,000 crashes per year involve "drowsy driving" and 1,500 of those crashes (1.5 percent) are fatal. Although these statistics address the effects of fatigue on driving, it is likely that they also indicate the level of risk fatigue may pose while performing other tasks that require similar levels of concentration.

Several studies have examined the relationship between work shift duration and risk of injury. These studies are summarized in Appendix D, Tables 1 and 2. Although the data vary, many of these studies conclude that there is an elevated risk of injury associated with working extended shifts and performing shift work. With respect to fatigue, Dembe, Erickson, Delbos, & Banks (2005) found that "long working hours indirectly precipitate workplace accidents through a causal process" by inducing fatigue or stress (p. 592). After reviewing 52 recently published studies, the National Institute of Occupational Safety and Health (NIOSH) concluded that overall, "a pattern of deteriorating performance on psychophysiological tests as well as injuries while working long hours was observed across study findings, particularly with very long shifts and when 12-hour shifts combined with more than 40 hours of work a week." (Caruso, et. al.,

Document ID: 0.7.19.1363.1

2004) These findings suggest that disaster workers, who frequently work longer shifts combined with longer work weeks and night shifts, may be at a higher risk of injury and reduced performance.

Shift Work

Shift work is a function of work scheduling that is often critical during the early phases of a response and may be necessary during disaster operations. NIOSH defines shift work as working outside the normal daylight hours, considered by NIOSH to be 7 a.m. to 6 p.m. Shift workers may work in the evening, during the middle of the night, overtime or extra-long workdays, and they may rotate from one shift to another during response and throughout disaster operations. Shift work schedules can be demanding and are likely to produce stress and fatigue (Rosa, 1997).

Many studies have shown that night shift workers get the least amount of sleep. This sleep loss affects a worker's ability to perform safely and efficiently. "If a worker also has lost sleep, fatigue could combine with the circadian low-point to double the effect on one's ability to perform. Studies of errors and accidents at different times of day show an increased risk at night when the circadian rhythm is low and sleep has been lost." (Rosa, 1997)

Additional references that include information on circadian rhythm, fatigue, and their relation to extended work shifts and shift work are included in Appendix D, Table 2.

Occupational Safety and Health Hazards

Hazards are not well characterized at a disaster site. Dependent upon the type of disaster, a variety of hazards may be present at the site. The following is a partial list of potential hazards:

Safety Hazards

- Falls from elevation
- Slips, trips, falls on the same level
- Electrocutions
- Striking/Being struck by vehicles, falling objects, heavy equipment
- Fire/explosives
- Confined space hazards
- Moving vehicles
- Musculoskeletal injuries
- Contact with power tools
- Eye injuries
- Cuts and punctures from materials handling
- Drowning
- Trenching

Health Hazards

- Atmospheric and dermal chemical hazards
- Carbon monoxide from generators/other combustion sources
- Heat or cold stress
- Insect/animal bites
- Contact with contaminated water (biological/chemical)
- Contact with bloodborne pathogens
- Exposure to building materials, such as silica, lead, fiberglass, and asbestos
- Exposure to fire, smoke, and toxic byproducts
- Excessive noise
- Radiation
- Chemical/biological weapons/hazards

Document ID: 0.7.19.1363.1

Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations

Physical Hazards

During all phases of disaster operations, physical hazards will be present. Many physical hazards are similar to typical construction worksite safety hazards, but intensified. At every disaster site, there will be an increased urgency as compared to normal workplaces, due to community and other external pressures to complete work as quickly as possible.

Because disasters can occur in any season, particular attention should be paid to heat and cold exposure. The use of personal protective equipment in hot climates will add to workers' overall body heat burden. Employers should ensure that an adequate supply of water is available and encourage hydration. Employers should also implement a heat stress program in the workplace with proper work/rest regiments to avoid heat-related illnesses, (Henshaw, Letter to C. Terhorst, 10/17/01; OSHA Quick Card on Heat Stress, 2005; OSHA Safety and Health Topics Webpage on Heat Stress.)

Physical hazards can include falls, electrocutions, being struck by equipment, fires and explosions, confined space hazards, musculoskeletal injuries, and lacerations, among others. As described in the section on fatigue, some studies have found that changes in the length and schedule of work shifts may be associated with increased injury rates. (Dong, 2005; Caruso et. al., 2004; Dembe, 2006, 2005; Editorial, Scand J Work Environ Health, 2005.)

Prolonged Exposure to Chemicals and Other Agents

OSHA PELs are usually expressed as 8-hour time weighted averages (TWAs). Many PELs were developed based on the assumption that employees will typically work for an 8-hour work shift and will recover for 16 hours before being re-exposed. OSHA requires an adjustment of the PEL for lead during extended work shifts in its construction and general industry standards. In both standards, the PEL is reduced for extended shifts according to the following formula:

$$\text{PEL (ug/m3)} = 400/\text{hours worked in the day.}$$

OSHA has adopted two sampling approaches when quantifying worker exposures to other hazards during extended work shifts. The first approach requires sampling what is believed to be the worst continuous 8-hour work period of the entire work shift. The TWA calculated for this period is used for comparison with the PEL. The second approach requires collecting multiple samples over the entire extended work shift. Using this approach, multiple personal samples are collected during the first 8-hour period, and additional samples are collected over the extended work period. Exposure is calculated based upon the worst eight hours of exposure during the entire extended work shift. (Fairfax, Memorandum on OSHA policy regarding PEL adjustments for extended work shifts, 11/10/99.)

Other organizations identify the use of mathematical models for adjusting occupational exposure limits. The American Conference of Governmental Industrial Hygienists (ACGIH) refers to the use of the Brief and Scala method to adjust Threshold Limit Values (TLVs) (ACGIH, 2008).

Document ID: 0.7.19.1363.1

Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations

The Brief and Scala method reduces exposure limits based on the hours worked per 24-hour day and the time period between exposures. NIOSH also notes the use of this method for adjusting exposure limits (NIOSH, 2001).

None of these methods deals with the very real issue of exposure to more than one agent during the course of an incident. Incidents like the Graniteville, South Carolina derailment in January 2005 routinely expose responders and the community to potentially deadly gases, but often to only one agent at a time. At Graniteville, the chlorine released from a tank car killed nine people, but the toxicology, physical properties and measurement of chlorine have been understood for a long time, and – despite some initial difficulties – responders were able to measure the gas appropriately and provide well-founded recommendations to the incident commander, eventually establishing three rings of real-time monitoring stations around the damaged railcar that sent data to a dedicated computer well-removed from the disaster (personal communication, C. Staton, 8-25-05).

Disasters like the World Trade Center, where many different agents mixed in the breathing zones of workers, pose much greater challenges for establishing acceptable exposure criteria, given the real possibility of synergistic effects. All of the OSHA PELs and ACGIH TLVs are established for single chemical exposures. The ACGIH and OSHA have the same approach to dealing with the mixing of chemicals vapors. If chemicals act on the same organ system, their combined effect should be given primary consideration. Without any data to the contrary, however, one assumes the effects to be additive and uses the mixture formula, where C is the measured concentration, and T is the threshold limit for that chemical. Any result greater than unity indicates that the limit has been exceeded:

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \cdots \frac{C_n}{T_n}$$

Unfortunately, for nearly all of the chemicals in use there are no data on synergistic effects because the research is not being done, given the costs and scope. A search of Toxline, which contains over 3 million citations, found only 110 hits when searching research over the last fifteen years for the key words “synergism and chemical and human” (8-27-05). The AIHA clearly indicates that its Emergency Response Planning Guide (ERPG), “with only a few exceptions, is devoted to one chemical or substance.” OSHA currently has PELs for roughly 500 chemicals. The Chemical Abstract Service (CAS) registry includes 30,011,521 organic and inorganic substances, as of October 1, 2006, (available at: http://www.cas.org/cgi-bin/regreport.pl). Despite the limited knowledge of synergistic effects from multiple chemicals, it is intuitive that extending work shifts will increase these multiple exposures and any concomitant synergistic effects from those agents.

Document ID: 0.7.19.1363.1

Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations

Impact of PPE Use in Disasters

Wearing PPE is often necessary during disaster operations; frequently, it is the only exposure control feasible for reducing employee exposures to the physical or chemical hazards present at the work site. It is important that disaster workers, particularly those who are assigned to work for extended hours, understand the limitations of the PPE they use and are aware of how long it will provide protection in a hazardous environment.

It may not be practical or protective to wear some forms of protective equipment for the entire extended work period. Most PPE and employer operating procedures are not designed for multiple hazards and prolonged periods of use. For example, respirator cartridges must be changed when they reach their "end of service life" (i.e., before the absorbent material become saturated) to ensure that the selected respirator continues providing adequate protection. An employer's cartridge change schedule may state that one set of cartridges is sufficient for the chemical exposure present over a standard 8-hour shift. However, if employees begin working 12-hour shifts with the same level of exposure, the cartridge change-out schedule must be reevaluated to ensure it is adequate for the extended work period. If exposures are anticipated to be higher during the extended period or additional chemicals will be present, the cartridges may need to be changed more frequently, a different set of cartridges may be necessary, or a more protective respirator may be required.

Using chemical protective clothing is also frequently necessary during disaster operations. Coated and tightly woven materials used in protective garments provide protection for a specific set of chemicals for which they have been tested. This test data is available from the manufacturer and should be consulted when selecting the type of chemical protective clothing for a specific incident. The chemical protective clothing selected must provide protection for the range of chemicals potentially present at each incident site. Test data should also be used to help determine how frequently individual garments should be changed during a work shift.

Chemical protective clothing made from coated and tightly woven materials can block the evaporation of sweat. Wearing this type of garment may increase an employee's risk of developing a heat-related illness. Extended work shifts require employees to use this type of PPE for longer periods of time, potentially increasing this risk. When designing a work-rest schedule or implementing other controls to reduce heat-related illnesses, it is important to ensure that the extended work period is also taken into account. Like chemical exposure guidelines, some temperature exposure guidelines may not be designed for work beyond a standard 8-hour day. Modifications may be necessary to apply the exposure guideline to work shifts that exceed eight hours.

It is also important to note that the use of PPE and, in particular, the use of respiratory protection, may pose a physiological burden under normal conditions. The burden on the worker's body will vary with the type of PPE and respiratory protection worn, the job and worksite conditions in which the PPE or respirator is used, and the medical status of the worker. Workers who use PPE and respiratory protection must be medically evaluated to ensure they are fit to use the

Document ID: 0.7.19.1363.1

required equipment while performing their assigned jobs. If workers are likely to work extended work shifts/rotations, this should be considered during the medical evaluation.

Ergonomic Considerations

Fatigue and discomfort may result from working in awkward postures or with excessive effort. These factors also may be associated with "musculoskeletal disorders" or "MSDs." These types of injuries are generally controlled using ergonomic principles.

Factors to consider may include, but are not limited to:

- Force - the amount of physical effort required to perform a task (such as heavy lifting, pushing, pulling) or to maintain control of the equipment or tools.
- Repetition - performing the same motion or series of motions frequently for an extended period of time.
- Awkward and prolonged static postures - assuming positions that place stress on the body, such as repeated or prolonged reaching above the shoulder height, bending forward or to the side, twisting, kneeling, or squatting.
- Contact stress - pressing the body or a part of the body (such as the hand) against hard or sharp edges, or using the hand as a hammer.
- Vibration - using vibrating tools, such as sanders, chippers, drills, grinders, or reciprocating saws, may result in fatigue, pain, numbness, increased sensitivity to cold, and decreased sensitivity to touch in fingers, hands, and arms. Exposure to whole body vibration may damage the joints of the skeletal system.
- Cold temperatures combined with the risk factors above may increase the risk of musculoskeletal disorders.

Not all of these risk factors will be present in every job, nor is the existence of one or all of these factors necessarily sufficient to cause injury. However, it is important to examine these factors when screening and analyzing jobs, operations, or workstations to determine which risk factor(s) is present. Jobs and tasks that have multiple risk factors have a higher probability of causing MSDs (OSHA, 2007).

Guidelines, analysis tools, and observation of the task help evaluators identify ergonomic hazards in the workplace. Examples of analysis tools include: Occupational Safety and Health Administration (OSHA) Evaluation Checklists at: http://www.osha.gov/SLTC/ergonomics/index.html; and Washington State Department of Labor and Industries Evaluation checklists at: http://www.lni.wa.gov/Safety/Topics/Ergonomics/default.asp. General solutions include administrative and work process modifications. Administrative approaches could include job rotation, job enlargement, rest breaks, and employee discussions. Work process modifications could include rearranging, modifying, redesigning or replacing: tools, equipment, workstations, packaging, parts, or products.

Document ID: 0.7.19.1363.1

Appendix A: Occupational Hazards, Psychological Impacts, and Other Considerations

Occupational Psychological Impacts

Relatively little is known about the psychological effects of extended work hours on disaster workers. A literature review found that studies conducted on the effects of work schedules tend to focus on such issues as health effects and accident rates for shift workers, effects of shift work on family relationships, and necessary recovery periods to maintain efficient and effective workers. Using this research, however, it is possible to make some inferences about the psychological effects of extended work hours. For example, Dembe, Erickson, Delbos, & Banks (2005) found that "long working hours indirectly precipitate workplace accidents through a causal process" by inducing fatigue or stress (p. 592). The use of the term "stress" can be inferred as an indication of psychological effects. Harrington (2001) posed a "chicken or the egg" question by considering shift workers to be a largely "self-selected population," making it difficult to know whether to attribute their increased anxiety and depression to shift work or to consider it to be a pre-existing condition. Tucker, Folkard & MacDonald (2003) also found overtime to be more harmful than working compressed work shifts, because working more than the standard number of hours per week denies workers sufficient time for recovery between shifts. This was particularly the case for workers who had low schedule autonomy and low social support. In addition, psychological effects can be inferred from studies (i.e., Salzman & Belzer, 2006; Pressler, 2000; Sparks, et al, 1997; White & Keith, 1990) that found negative effects on family relationships from either shift work or extended working hours. Troubled marriages and/or divorces are known to have major psychological impacts on those involved.

A significant number of studies focused on the necessary time frames needed to recover from either extensive work hours or from extremely stressful work, which also has implications for psychological effects. For example, Sonnentag & Zijlstra (2006) and Dahlgren, Kecklund, & Ackerstedt (2005) found that the more intense the work day, the longer it takes a worker to unwind. Job demands (e.g., time pressure, role ambiguity, situational constraints, and long working hours) combined with low job control (e.g., control over work schedule, breaks) can result in fatigue symptoms that include disturbed mood and impaired cognitive functioning. This increases the need for recovery. The types of activities engaged in off the job predict the level of recovery (e.g., time spent in social or physical activities such as sports facilitates recovery). They conclude that recovery opportunities are important for worker functionality, particularly with work that makes high demands on people's physical and psychological resources through exposure to hazards, situational constraints, or extended working hours. In addition, Fritz & Sonnentag (2005) also found that having to deal with nonwork-related struggles during time off impedes recovery, whereas participation in social activities and sports enhanced recovery. In a slightly different vein, Baxter and Kroll-Smith (2005) suggested benefits from introducing naps into the workday schedule, citing positive results from studies on airline pilots and train crews.

There is another body of literature that can be used to infer psychological effects from extended work hours—the literature that examines the psychological effects of emergency response work, whether by traditional emergency responders (e.g., fire fighters, police, EMTs) or by the workers who are called on to assist during and after emergency operations. Emergency responders, whether they are those traditionally viewed as first line emergency responders or those in the second line who are called in to assist shortly after a disaster occurs (e.g., members of the

Document ID: 0.7.19.1363.1

construction industry) can be exposed to a variety of experiences that may potentially cause psychological and even traumatic effects. Responders can face a number of known and unknown risks, hazards, and dangers, some of which may be life-threatening or have future physical health implications. They may be working in physically unsafe conditions (e.g., collapsed buildings). They may be exposed to toxic substances. They may be confronted with dead bodies or severely injured victims. Some of their colleagues may become victims as a result of their response work. All of these difficulties can be compounded by the extended working hours and rotating shifts frequently encountered in emergency response work and disaster operations. In these circumstances, the physical stresses, often accompanied by skipped or inadequate meals, can tax the responder's physical and emotional resources, making it difficult to deal with the psychological distress. Those in the traditional emergency response professions may have built up a certain amount of tolerance to such exposures; in their case, however, the effects can be cumulative, and serious effects are not uncommon. For those in such fields as construction, the reactions may be more acute and immediate.

Whether responders are dealing with natural disasters, technological disasters, or terrorist events, they may experience fear, anxiety, grief, and guilt. They may have difficulty sleeping and/or eating. They may have nightmares or flashbacks. They may become extremely irritable and/or emotional, experience mood swings, and have memory problems. If these problems persist, the responder could be diagnosed with PTSD. For example, approximately 20% of the 1,138 World Trade Center rescue/disaster workers studied by the CDC met the symptom threshold for PTSD (CDC, 2004).

For these reasons, it is important that supervisors monitor their workers and provide assistance at the first indication of need, rather than waiting until a worker's symptoms multiply and become potentially incapacitating. Such assistance can be in the form of psychological first aid provided by peers or mental health professionals in the field or through the organization's employee assistance program. When possible, this assistance should include an educational component that presents information on healthy ways to manage stress and an opportunity for counseling if the worker desires.

Other Considerations Impacting Work Environment

Other factors associated with the overall work environment at a disaster site (e.g. travel time, base camp conditions, limited familiarity with the area, and sanitation) can affect how site hazards and exposures impact workers. Disaster workers should be briefed so that they are aware of the overall conditions and challenges that they will face once on site. They should also be medically evaluated to ensure they are physically and mentally fit for successful deployment given the likely work and living conditions at the site.

Travel Time and Road Conditions

Travel time to and from the work site should be factored into the length of the workday. Excessive travel time can lengthen the workday considerably, creating additional fatigue and stress. Workers may have limited pre-incident knowledge of the affected area and maps may be

Document ID: 0.7.19.1363.1

rendered useless by the incident. Both can create challenges for navigation. If road signals are destroyed and roads are covered with debris and utility lines, then driving conditions become increasingly hazardous, particularly for workers that have little knowledge of the area. All of these circumstances could lead to an increase in vehicular accidents. Consideration should also be given to the type of vehicle that will be provided. Disaster conditions may warrant the use of larger, more rugged vehicles. Workers should be familiar with and have the proper skills to safely operate the vehicle provided.

Base Camps

Base camp conditions and layout are also an important consideration. Since it is likely that there will be shift work and scheduled days off throughout an incident, base camps need to be set up in a manner that will provide dark, quiet areas for resting and sleeping at all times of the day. Sleeping areas should be isolated from dining facility, bathrooms, etc., to minimize noise. Early in an incident, when resources and supplies are stretched to their limits, adequate housing and eating facilities may be scarce. Supervisors must ensure that no one is deployed into the area without guaranteed adequate housing and eating facilities.

Sanitation Provisions

Medical sources indicate that in situations where personnel are under stress and tired, the risk of staphylococcus or other infections increases as the body's immune system is compromised. Additionally, psychological stress has been demonstrated to delay wound healing and decrease immune/inflammatory responses required for normal bacterial clearance. Sanitation is an extremely critical health and safety element that needs to be adequately addressed to safeguard the wellbeing of disaster workers.

Drinking Water

Consideration must be given the providing and adequate supply of drinking water. Cool water must be provided during hot weather. Drinking water must be provided according to the requirements of the Safe Drinking Water Act, as amended, and all applicable Federal, State, and local regulations. Facilities classified as suppliers of water—

(1) Must comply with substantive and procedural requirements pursuant to 40 CFR 141;
(2) Must meet any State and local regulations that are more stringent than the Federal regulations; and
(3) Shall ensure that the sanitary control and surveillance of water supplies and that the chlorination and fluoridation are conducted according with applicable guidelines.

- Drinking water must be dispensed by means that prevent contamination between the consumer and the source.
- Potable drinking water dispensers must be designed, constructed, and serviced to ensure sanitary conditions; must be capable of being closed; and must have a tap.

Document ID: 0.7.19.1363.1

- Containers must be clearly marked as "DRINKING WATER" and must not be used for other purposes.

- Do not dip cups or ladles into container to get water - use containers with spouts.
- Fountain dispensers must have a guarded orifice.
- Use of a common cup (a cup shared by more than one worker) is prohibited unless the cup is sanitized between uses. Disposable cups are preferred.
- Employees must use cups when drinking from portable water coolers/containers.
- Unused disposable cups must be kept in sanitary containers and a waste receptacle must be provided for used cups.
- Outlets dispensing non-potable water must be conspicuously posted "**CAUTION - WATER UNSAFE FOR DRINKING, WASHING, OR COOKING**."

Toilets

When sanitary sewers are not available, one of the following facilities, unless prohibited by local codes, must be provided: chemical toilets, recirculating toilets, combustion toilets, or other toilet systems as approved by State/local governments.

- Each toilet facility must be equipped with a toilet seat and toilet seat cover. Each toilet facility - except those specifically designed and designated for females - must be equipped with a metal, plastic, or porcelain urinal trough. All must be provided with an adequate supply of toilet paper and a holder for each seat.
- Toilet facilities must be so constructed that the occupants will be protected against weather and falling objects; all cracks will be sealed and the door will be tight-fitting, self-closing, and capable of being latched.
- Adequate ventilation must be provided and all windows and vents screened; seat boxes must be vented to the outside.
- Toilet facilities must be constructed so that the interior is lighted.
- Cleaning of construction site-type portable toilets usually can not wait for routine weekly maintenance. These facilities must be inspected at least once per shift and cleaned as appropriate to maintain the interior surfaces as sanitary as possible.

Washing Facilities

Washing facilities must be provided at toilet facilities and as needed to maintain healthful and sanitary conditions. Washing facilities for persons engaged in the application of herbicides, insecticides, or other operations where contaminants may be harmful must be at or near the work site and shall be adequate for removal of the harmful substance.

Each washing facility must be maintained in a sanitary condition and provided with water (either hot and cold running water or tepid running water), soap, and individual means of drying. However, where it is not practical to provide running water, hand sanitizers (e.g., Purel) may be used as a substitute.

Document ID: 0.7.19.1363.1

Showers must be provided in accordance with the following:

a. One shower shall be provided for every ten employees (or fraction thereof) of each sex who are required to shower during the same shift;
b. Body soap or other appropriate cleansing agent convenient to the shower shall be provided;
c. Showers shall have hot and cold running water feeding a common discharge line; and
d. Employees using showers shall be provided with individual clean towels.

Shower facilities should be sanitized between uses (sprayed with hypochlorite solution and must be inspected at least once per shift and cleaned carefully with disinfectant daily).

Living Quarters

When temporary sleeping quarters are provided, they must be heated, ventilated, and lighted.

Bedding and common areas must be picked up daily and sprayed with a disinfectant (e.g., Lysol). Additionally, workers must decontaminate their boots when returning from a work site before walking into the facility or to bunk areas to decrease the chance of cross contamination.

Food Preparation

All employees' food service facilities and operations must meet the applicable laws, ordinances, and regulations of the jurisdictions in which they are located.

All employee food service facilities and operations must be carried out in accordance with sound hygienic principles. In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

Food storage containers must be clearly marked as such and segregated to the extent possible to prevent contamination.

Food preparation surfaces must be cleaned with disinfectant frequently. Utensils, pots, pans, and containers must be washed between uses with hot water and antibacterial soap and stored to prevent contamination between uses.

First Aid

All injuries that result in breaks in the skin must be cleaned and treated with appropriate antibiotics (e.g., over-the-counter triple antibiotic/Neosporin) and injuries must be monitored by first aid personnel.

Document ID: 0.7.19.1363.1

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Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source
Federal Agency Operating Practices Related to Work Hours and Work Rotations for Federal Employees				
USACE	USACE Employees During Emergency Response Operations	Should not work in excess of 84 hours per week (usually 12 hours per day, 7 days a week, during emergency response). *Note: If travel time to and from work exceeds 90 minutes one way, work hours shall be shortened by the travel time in excess of the 180 minute round trip travel time.*	Employees provided opportunity for 24 hours rest after working 14 days and 48 hours of rest after working 21 days. Employees required to take at least 24 hours off for rest after continuous 29-day period of work and at least 24 hours off every 2 weeks thereafter.	Duty Schedule defined in EM 385-1-1, App B Par 8.
Department of Interior (DOI)	National Interagency Fire Fighters	National interagency fire fighters work up to 16-hour days. *Note: Travel time is included in the 16 hour per day limit. There is also a 10-hour limit of behind the wheel driving time (this is consistent with the policies summarized in "Voluntary Standards" under National Wildfire Coordinating Group).*	14 days on, 2 days off schedule. This constitutes a 2:1 work to rest ratio.	Chapter 10 Objectives, Policy, and Scope of Operation, 2006 National Interagency Mobilization Guide from the National Interagency Coordination Center at the National Interagency Fire Center.
USCG	USCG personnel on vessels conducting maritime operations	The Crew Endurance Management System (CEMS) provides a system of proven practices for managing endurance risk factors that affect	A crew endurance risk assessment is conducted by a crew endurance work group made up of trained personnel and individuals involved	Crew Endurance Management System

Document ID: 0.7.19.1363.1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source
		operational safety and crewmember efficiency in the maritime industry. It is a cyclical, continuous-improvement process, which allows an organization to make improvements at a level and pace appropriate to its operation, focusing efforts towards those factors that are most feasibly mitigated and present the greatest possible reduction of risk. The system does not specify hour limitations; it is a process designed to evaluate and mitigate specific risk factors that USCG has identified as critical for crew endurance during marine operations.	in the unit/operation. The risk assessment is conducted for units/operations using a standard risk factor assessment form. A crew endurance management plan is then developed for the unit/operation to address the risk factors identified. Risk factors include items such as: less then 7-8 hours of uninterrupted sleep daily, poor sleep quality, main sleep scheduled during the day, work hours exceeding 12 hours, high workload, poor diet, lack of control over work environment, exposure to extreme environmental conditions, no opportunity to exercise, isolation from family. Rest breaks and controlling work shift/work rotation durations may be part of the endurance plan to mitigate the risk factors identified.	(December, 2005) www.uscg.mil
NIOSH	CDC staff involved in preparedness exercises	The recommended work shift is 9hrs/day; the recommended work week is 40hrs/week. The recommended number of continuous work days is 4.	The recommended work shift (9hrs/day) includes travel time.	Official agency policy
	CDC staff deployed in response to a health incident	During the first 3 days of an incident, the recommended work shift is 12hrs/day and the recommended work week is 36hrs/week. Beginning on the 4th day of an incident the recommended work	After the first 3 days, staff should be given a mandatory day off. Beginning on the 4th day of the incident, the work rotation should shift to 5 days on with two days off. The recommended work shift, in all	Official agency policy

Document ID: 0.7.19.1363.1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source
		shift/work week changes to: 9 hour work shifts and 45 hour work weeks.	cases, includes travel time.	
Standards and Guidelines that address Work Shift and Work Week Durations for a Regulated/Covered Population of Workers				
DOT	Commercial Motor Vehicle Drivers DOT recognized the potential hazards of working extended hours and the likely dangerous results of fatigue in commercial truck driving as early as 1939. In April 2003, DOT issued the first revisions to the Hours of Service rule in over 60 years.	11-hour limit on the length of time a long-haul truck driver can drive after 10 consecutive hours off.	May not drive beyond the 14th hour after coming on duty, following 10 consecutive hours off duty. May not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.	DOT website. www.fmcsa.dot.gov/Home_Files/revised_hos.asp
Federal Aviation Administration (FAA)	Pilots/Flight Crews	Crew members cannot accept an assignment if they will exceed any of the following: · 1,000 hours in any calendar year · 100 hours in a any calendar month · 30 hours in any seven consecutive days · 8 hours between required rest periods.	Specific rest requirements between flights range from 8-11 hours (based on total flight time during a 24-hour period). Exceptions made to these rules require that flight crew members receive the proper amount of compensatory rest time during the next rest period. Rules do not address the amount of time flight crew members can be on duty (standby time). Airline rules may be even stricter than FAA regulations if the issue is part of a collective bargaining agreement.	Pilot Flight Time and Rest, FAA, Fact Sheet (2006) http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6762
Nuclear Regulatory Commission	Nuclear Power Plant Personnel	Proposed rule requires standard working hour limits of 16 hours in a 24-hour period, 26 hours in a 48-	Proposed rule requires breaks of at least 10 hours between shifts, a 24-hour break in any 7 days, and a 48-	http://ruleforum.llnl.gov/cgibin/downloader/Part26

Document ID: 0.7.19.1363.1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source
(NRC)	The NRC has proposed regulations on fitness for duty, including managing fatigue. This regulation may become final rule in 2007.	hour period, and 72 hours in a week, excluding shift turnovers.	hour break in any two weeks are required. Some exceptions to these limits can be made in the first 8 weeks of outages.	_risk_lib/1054-0155.htm?st=risk (downloaded 11/28/2006) and personal communication with NRC personnel
ACGME	For Medical Residents Voluntary accreditation program, which sets standards that restrict the number of work hours for residents.	Guidelines limited on-call activities to 24 consecutive hours (plus six additional hours for continuity of care follow-up) and weekly totals to 80 hours.		ACGME *Resident Duty Hours Language: Final Requirements.* February 24, 2003. http://www.acgme.org/DutyHours/dutyHrsLang.pdf
National Wildfire Coordinating Group (NWCG)	Personnel from Participating Agencies (U.S. Department of Agriculture (USDA) Forest Service, Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Indian Affairs (BIA), Fish and Wildlife Service (FWS), and State forestry agencies through the National Association of State Foresters) The NWCG coordinates	Work shifts exceeding 16 hours and/or consecutive days that do not meet the work/rest ratio should be the exception. No work shift should exceed 24 hours. In situations where this does occur, incident management personnel will resume 2:1 work/rest ratio as quickly as possible. The IC or Agency Administrator	Plan for/ensure all personnel are provided a minimum 2:1 work to rest ratio (for every 2 hours of work or travel, provide 1 hour of sleep and/or rest). Standard assignment length is 14 days (exclusive of travel from and to home unit) with possible extensions identified below. Time spent in staging and preposition status counts toward the 14-day limit, regardless of pay	Interagency Incident Business Management Handbook

Document ID: 0.7.19.1363.1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source
	programs of participating wildfire management agencies. Its goal is to provide more effective execution of each agency's fire management program. NWCG provides standards of training, equipment, qualifications, and other operational functions that individual agencies adopt and implement. Prior to assigning incident personnel to back-to-back assignments, their health, readiness, and capability must be considered.	must justify work shifts that exceed 16 hours and those that do not meet 2:1 work to rest ratio. Justification will be documented in the daily incident records. Documentation shall include mitigation measures used to reduce fatigue.	status, for all personnel, including incident management teams. After completion of 14-day assignment and return to the home unit, two mandatory days off will be provided (2 after 14). Extensions may be allowed in some circumstances.	
European Union	All workers Provides a useful example of how European Union views the work week, and the necessity for rest breaks and recovery periods. The directive also includes additional provisions for night time work, shift work, and annual leave.	Average working time not to exceed 48 hours for each 7-day period, including overtime.	Minimum daily rest period of 11 consecutive hours per 24-hour period. A minimum uninterrupted rest period of 24 hours for each 7-day period.	European Directive on Working Time (93/104/EC) in 1993.

Document ID: 0.7.19.1363.1

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Summary of Current Drowsy Driving Legislation (From the Journal "Sleep Review" – October 2007)	
State/Bill Number	**Summary of Legislation**
Illinois SB 104	A person who causes a fatal accident by operating a motor vehicle, all-terrain vehicle, snowmobile, or watercraft while he or she is aware of being fatigued is guilty of reckless homicide.
Kentucky HB 150	A person is guilty of reckless homicide when, driving while fatigued, he causes the death of another person.
Massachusetts S No. 2072	Addresses drowsy driving education and enforcement.
Michigan HB 4332	Includes driving while fatigued in definition of reckless driving.
New Jersey AB2265 (SB1851)	Requires the recording of driver distraction, including fatigue, on accident forms.
New Jersey AJR 86	Creates a commission to study highway rest areas for truck drivers.
New York A970	Requires holders of commercial driver's licenses to submit to medical examinations and testing for sleep apnea.
New York A1234 (S1290)	Creates a misdemeanor for driving while drowsy; creates felony crime of vehicular homicide caused by driving while ability-impaired by fatigue.
New York A2332	An act to amend traffic law in relation to driving while fatigued.
New York A4134 (S2488)	Adds fatigue to definition of recklessness in vehicular assault and vehicular manslaughter statues.
Oregon HB 3021	Creates offense of driving while fatigued; punishes by maximum of 5 years imprisonment, $125,000 fine, or both; requires that fatigue be included on driver's license test.
Tennessee SB 71 (HB 117)	Allows a judge or jury to infer fatigue as a cause in a traffic fatality when the defendant had not slept in the past 24 hours.

Document ID: 0.7.19.1363.1

Appendix C: References

Table 1: Association between Working Extended Work Shifts/Work Weeks and Workplace Injury: Summary of Reviewed Literature

This table highlights studies that evaluated the association between hours worked and occupational injury. It presents data from several recent studies where the risk of injury has been quantified and/or modeled. None of the studies highlighted here or in Table 2 evaluate how the implementation of a well-designed and well-managed fatigue management program, such as the one recommended in Section 2.1, would impact the risk of injury. However, it is clear from the studies included in Table 2 that when aspects of such a program, e.g., including breaks throughout a work shift, are implemented, fatigue is reduced and performance is enhanced; the risk of injury may be similarly reduced. These data should be used collectively when designing a work schedule for an incident-specific fatigue management plan. It is "necessary to consider the various features of the schedule in combination with one another, rather than in isolation from one another" (Johnson & Lipscomb, 2006).

Reference	Risk of Injury **(as compared with working 8-hr work day, working during the day shift, and working a 40 hr work week)**					
	10-hr work shift	12-hour work shift	afternoon work shift	night work shift	successive shifts	> 40-hr work week
S. Vegso, et al, 2007						↑ by 88% for those who worked more than 64 hr during the previous week
Folkard & Lombardi, 2006 (model using results from numerous studies)	↑ by 13%	↑ by 27.5%	↑ by 15.2%	↑ by 27.9%	Night Shifts: ↑ by 6% for 2nd night worked ↑ by 17% for 3rd night worked ↑ by 36% for 4th night worked Day Shifts: ↑ by 2% for 2nd day worked ↑ by 7% for 3rd day worked ↑ by 17% for 4th day worked	Varies based on of length of shift and time of day. For any given work week duration, a long span of short shifts is likely to be safer than a short span of long shifts. 60 hour week – as 6 10-hr days: ↑ by

Document ID: 0.7.19.1363.1

Appendix C: References

Reference	Risk of Injury **(as compared with working 8-hr work day, working during the day shift, and working a 40 hr work week)**					
	10-hr work shift	12-hour work shift	afternoon work shift	night work shift	successive shifts	> 40-hr work week
						16% (day) ↑ by 54% (night) as 5 12-hr days: ↑ by 28% (day) ↑ by 62% (night)
Dembe, et al, 2005		↑ by 37%				↑ by 23% (60 hrs/week)
Dong, 2005	↑ by 57% (> 8 hrs; construction workers)					↑ by 98% (> 50 hrs; all occupations)
Folkard & Lombard, 2004	↑ by 13%	↑ by 27.5%	↑ by 18.3%	↑ by 30.4%	Night Shifts: ↑ by 6% for 2nd night worked ↑ by 17% for 3rd night worked ↑ by 36% for 4th night worked Day Shifts: ↑ by 2% for 2nd day worked ↑ by 7% for 3rd day worked ↑ by 17% for 4th day worked	
Folkhard & Tucker 2003,			↑ by 18.3%	↑ by 30.4%	Night Shifts: ↑ by 6% for 2nd night worked ↑ by 17% for 3rd night worked ↑ by 36% for 4th night worked Day Shifts: ↑ by 2% for 2nd day worked ↑ by 7% for 3rd day worked	

Document ID: 0.7.19.1363.1

Appendix C: References

Reference	Risk of Injury **(as compared with working 8-hr work day, working during the day shift, and working a 40 hr work week)**					
	10-hr work shift	12-hour work shift	afternoon work shift	night work shift	successive shifts	> 40-hr work week
					↑ by 17% for 4th day worked	
Baker, 2003*	no significant ↑; accidents peaked – 10th hour (day shift) and 12th hour (night shift)					
Johnson & Sharit, 2001*		no significant ↑ (switched from 8- to 12-hr work shift)				

* "Research comparing 8- and 12-hour shift schedules has not consistently reported increases in health and safety risks with longer shift durations. Some of the 12-hr shift schedules offset longer shifts with fewer consecutive work days (a "compressed" work week) and more rest days so that total hours approximate a 40-hr week. Fewer commutes may be another offsetting advantage. Thus, future research needs to consider potential interactions of shift length with length of work week, opportunity for rest, and commuting requirements." (Caruso et al., 2006)

Considerations for evaluating data included in this table:

- This table highlights studies that evaluate the relationship between hours worked and risk of injury. It presents data from several recent studies where this relationship has been quantified or modeled. There are numerous studies that evaluate the relationship between hours worked and other health effects, which are of equal importance in understanding the full range of effects that workers may experience when working extended work shifts, work weeks, and work rotations. Many of these studies are highlighted in the literature review presented in this Appendix.
- None of the studies evaluated workers during disaster operation.
- Most of the studies included individuals working in a broad range of occupations, or focused on a single manufacturing or market sector. The study lead by Dong focused on constructions workers, an occupation that is frequently involved in disaster operations, but did not focus on construction operations during a disaster.

Document ID: 0.7.19.1363.1

Appendix C: References

- All of the studies have design and data limitations; it is important to understand these limitations when evaluating the data presented in the study and in this table.
- The type and severity of injury is not well defined in the studies reviewed. Folkard and Lombardi (2006) note that "in the vast majority of cases the incidents on which these trends are based were not severe, but it is likely that they represent a relatively direct measure of the occurrence of mistakes and omissions." Injury severity likely varies among the individuals within each study and between the studies evaluated.

Table 2: Summary of Literature and Bibliography

Author(s)	Title	Publication	Findings/Recommendations
American Conference of Governmental Industrial Hygienists (ACGIH)	Threshold Limit Values (TLVs®) for Chemical Substances and Physical Agents and Biological Exposure Indices BEIs® (2008)	Published by the ACGIH, available at www.acgih.org	TLV® occupational exposure guidelines are recommended for more than 700 chemical substances and physical agents. There are more than 50 Biological Exposure Indices (BEIs®) that cover more than 80 chemical substances. Chemical Abstract Service (CAS) registry numbers are listed for each chemical. Introductions to each section and appendix provide philosophical bases and practical recommendations for using TLVs® and BEIs®.
International Agency for Research on Cancer (IARC) Monograph Working Group (A. Blair, et al)	Carcinogenicity of shift work, painting, and firefighting	Lancet Oncology; 8 (12), December 2007	A meeting of 24 international scientists at the IARC in October 2007 to review numerous epidemiological studies concluded that shift work that involves circadian disruption, occupational exposure as a painter, and occupational exposure as a firefighter are possibly carcinogenic to humans.

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
E. Pukkala & M. Harma	Editorial: Does shift work cause cancer?	*Scandinavian Journal of Work & Environmental Health*, 2007; 33(5), 321-323.	Points out the need for reliable and unbiased human evidence to show a dose-response relationship between the studied exposure and the specific disease as well as identification of a specific mechanism explaining the possible epidemiologic association. Also discusses an epidemiologic study in this same issue (J. Schwartzbaum, A.Ahlbom, & M. Feychting: Cohort study of cancer risk among male and female shift workers, pp. 336-343) that suggests no effect of shift work on cancer risk. Points out limitations of that study, including small proportion of shift workers in the studied population.
D.L. Elliott & K.S. Kuehl	Effects of Sleep Deprivation on Firefighters and EMS Responders	Rpt. For International Fire Chiefs Association, 2007.	Supports other studies in finding an association between lack of sleep and decreased alertness, inability to think clearly, depression, and decrements in job performance as well as increased obesity and cardiovascular disease in workers working extended hours or night shifts. Examines measures for managing work hours' effects from both employment –related (e.g., worker environment & fatigue management) and personal control perspectives (e.g., sleep hygiene and life style).
J.A. Ricci, E. Chee, A.L. Lorandeau, J.	Fatigue in the U.S., workforce: Prevalence and implications for	JOEM, 2007, 49(1), 1-10	Study using a US national population-based random digit-dial telephone survey with a sample of 28,902 adults

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
Berger	lost productive work time		age 18-65 found an estimated 2-week prevalence of fatigue of 37.9%, with 9.2% of workers reporting lost productive work time due to fatigue. Study also estimated an annual cost of $136.4 billion from fatigue-related, health-related lost productive work time to employers.
Occupational Safety and Health Administration	Ergonomics for the Prevention of Musculoskeletal Disorders Draft Guidelines for Shipyards (2007)	http://www.osha.gov/dsg/guidance/shipyard-guidelines.html	These guidelines provide recommendations for shipyards to help reduce the number and severity of work-related musculoskeletal disorders, increase employer and employee awareness of ergonomic risk factors, eliminate unsafe work practices, alleviate muscle fatigue, and increase productivity. The heart of these guidelines is the description of various solutions that have been implemented by shipyards. These guidelines expand on these recommendations, and include additional information that employers can use to identify problems and train employees. This document includes an introduction; a process for protecting employees; solutions that employers can use to help reduce MSDs in shipyards; and additional sources of information on ergonomics in shipyards.
C. Caruso	Possible broad impacts	Industrial Health, 2006, 44, 531-536	Summarizes research linking long work

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
	of long work hours		hours to a variety of risks to workers, families, employers, and the community, including sleep deprivation, poor recovery from work, decrements in neuro-cognitive and physiological functioning, illnesses, adverse reproductive outcomes, and injuries. Suggests loss of workers with critical public safety skills may be a potential negative impact for society when these workers leave their jobs because of demanding work schedules. While this suggestion is based on a study of the nursing profession, this also has a potential application to emergency responders.
A. Pietroiusti, A. Forlini, A. Magrini, A. Galante, L. Coppeta, G. Gemma, E. Romeo, A. Bergamaschi	Shift work increases the frequency of duodenal ulcer in *H pylori* infected workers	Occ & Envir Med, 2006, 63, 773-775	In a study of 941 workers, 546 tested positive for *H pylori* infection (the main causative agent for peptic ulcer disease); 303 were daytime workers, and 132 were shift workers; the prevalence of gastric ulcers was higher in shift workers (28.7%) than in daytime workers (9.3%). Potential implications for physical health effects of shift work & extended hours.
A.E. Dembe, J.B. Erickson, R.G. Delbos, S.M. Banks	Nonstandard shift schedules & the risk of job-related injuries	Scand J Work Environ Health 2006: 32(3), 232-240	Examined reported incidence of work-related injuries/illnesses among a nationally representative sample of 10,793 working adults in the US over a 13-year period. Findings indicated workers in "nonstandard" shifts (i.e., other than 8-hr day shifts) have greater

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			risk of occupational injuries/illnesses.
S. Sonnentag, F.R.H. Zijlstra	Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue	J of Applied Psych, 2006, 91(2), 330-350	Examined factors affecting workers' need for recovery. Concluded that the more demanding the situation and higher/longer lasting (more time/overtime) the required level of activity, the greater the consumption of personal resources and the greater the need for recovery. Also examined the effects of leisure activities on recovery rates, concluding that social and athletic leisure activities facilitate recovery. Practical implications include viewing high subjective need for recovery as an early warning indicator for prolonged fatigue and reduced well-being. Recommends organizational policies that prevent extended work days and promote active leisure activities after work.
G.M. Salzman, M.H. Belzer	Truck driver occupational safety and health: A conference report and selective literature review	NIOSH/Wayne State University, April 24-25, 2006	Detailed overview of medical, psychological, family/social hazards associated the extended hours commonly worked by truck drivers.
B. Fryer	Sleep deficit: The performance killer – A conversation with Harvard Medical School Professor Charles A. Czeisler	Harvard Bus Rev, Oct. 2006	Identifies four major sleep-related factors that affect cognitive performance: homeostatic drive for sleep at night; total amount of sleep over several days; circadian phase; and sleep inertia. Points out additional sleep-

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			related issues that accompany aging. Describes sleep deprivation as a public health hazard. Urges the development of corporate sleep policies similar to those relating to smoking, and sexual harassment. Recommends limiting scheduled work to no more than 12/hrs/day (16 under exceptional conditions); 11 consecutive hours of rest every 24 hrs; weekly work limited to maximum of 60 hrs; minimum of one day off/week, preferably two consecutive days. Also recommends mandatory educational programs about sleep, health, and safety focusing on effects of electronic devices on sleep and how alcohol and caffeine interfere with sleep, as well as annual screening for sleep disorders.
S. Folkard & D.A. Lombardi	Modeling the impact of the components of long work hours on injuries and "Accidents"	Amer J of Indust Med, 2006, 49:953-963	Identified and evaluated four trends in incidents associated with features of shift systems: increase in risks as shifts progress across the day (i.e., morning, afternoon, night); increase in risks across successive night shifts; increased risk across successive day shifts; and increased risk with time on shift. Recommends placing a limit on the acceptable level of fatigue or risk associated with a particular work schedule rather than setting specific work hour regulations. The model is

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			based on a "normal working week" of 5 successive 8-hr day shifts, setting the relative risk at 1.00, with the relative risks for all other working hour combinations expressed relative to this. Thus, 6 successive 8-hr day shifts would increase the risk 3%, but 4 successive 12-hr day shifts would increase the risk by 25%, and 6 successive 8-hr night shifts would increase the risk by 55%.
D. Johnson	The rest is up to you	Industrial Safety & Hygiene, Nov. 1, 2006	Focuses on the safety risks posed by wide spread sleep deprivation. Points out that "bosses" aren't the only ones responsible for the way people push themselves. Acknowledges but expresses skepticism regarding the adoption of many of the common sense recommendations from Harvard's Dr. Czeisler.
Anonymous	Are we seeing the end of lunch?	HR Dailey Advisor, Dec. 4, 2006	Highlights a steady decline in workers taking lunch breaks and estimates that 75% of workers eat but do it at their desks while working. Points out that blood sugar levels drop every 4-5 hrs, resulting in decreased efficiency if the body isn't refueled. Cites efforts by government agencies in Nova Scotia to push people to take lunch breaks
J. Johnson, J. Lipscomb	Long Working Hours, Occupational Health and the Changing Nature of Work	American Journal of Industrial Medicine, 49, 921-929 (2006)	An overview of historical, sociological, and health-related research presented at an international conference on long working hours. Is the introductory article

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
	Organization		for a special section in this issue of the Journal. Provides a broad discussion of the changes in the workplace and societal trends that are associated with long working hours. Summarizes results of the other articles in the issue that address the safety and health effects of long working hours. Concludes that improved methodologies are needed to track exposure to long working hours and irregular shifts longitudinally. Research should focus on the adverse impact that sleep-deprived and stressed workers may have on the health of the public that they serve.
C Caruso, T. Bushnell, D. Eggerth, A. Heitmann, B. Kojola, K. Newman, R. Rosa, S. Sauter, B. Vila	Long Working Hours, Safety and Health: Toward a National Research Agenda	American Journal of Industrial Medicine 49:930-942 (2006)	The NORA Long Work Hours Team examined research papers and literature reviews, and gathered input from a conference on long work hours organized by the Team and faculty from the University of Maryland. A framework is proposed for long work hours, including determinants, outcomes, and moderating factors of long work hours, suggesting that studies need to include more clear and complete descriptions of work schedules, worker characteristics, and the work environment, and need to consider a wider range of possible health, safety, social and economic outcomes for workers, families, employers, and the

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			community. Additional studies are needed on vulnerable employee groups and those critical to public safety. More studies are also needed to develop interventions and test their effectiveness.
MB Spencer, KA Robertson, S Folkhard	The development of a fatigue/risk index for shiftworkers	Research Report 446, Health and Safety Executive (United Kingdom) (2006)	This report describes the work carried out to revise and update the Health and Safety Executive Fatigue Index. The fatigue index was originally developed as a method of assessing the risk arising from fatigue associated with work patterns for safety critical workers. The Fatigue Index is designed to provide an assessment of changes in work patterns and to determine whether any particular aspect of the work pattern was likely to increase levels of fatigue. The fatigue index is now widely used in the rail industry and is being increasing used in other sectors. The report includes an extensive discussion of literature related to shift work and fatigue, as well as risk of injuries and accidents related to shift work. Because there is now more information concerning trends in risk related to shift work, the authors were able to update the fatigue index and construct a new index entirely related to risk, rather than to fatigue and performance. These indices may be useful as risk assessment tools in evaluating the potential risk associated

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			with several alternative proposed work schedules at disaster work sites.
USCG	Crew Endurance Management System (December, 2005)	www.uscg.mil	Provides access to training materials, a guide, and a tool to assist the user in identifying risk factors and designing controls to address them. The information in the Guide was developed specifically for, and tested on, USCG assets. The guide and accompanying tool are designed to assist the user in understanding what crew endurance risk is, recognize the factors that compromise endurance, and develop strategies to manage and control crew endurance risk. Though specifically designed for USCG crews, the information and approach may be valuable in other workplaces.
V. Baxter, S. Kroll-Smith	Normalizing the workplace nap: blurring the boundaries between public & private space & time	Current Sociology 2005: 53(1), 33-55	Examined existing evidence of napping in the workplace using interviews with corporate CEOs, NASA and DOD reports, and web-based searches. Cited research supporting benefits of napping for workers during prolonged, irregular, and/or sustained work schedules.
A. Dahlgren, G. Kecklund, T. Akerstedt	Different levels of work-related stress & the effects on sleep, fatigue & cortisol	Scand J Work Environ Health 2005: 31(4), 277-285	Study compared effects of high stress and low stress work weeks for 55 Swedish office workers, indicating more sleepiness and sleep problems, including shorter sleep length during the high stress week, which was hypothesized to have the potential for health effects on a long-term basis. In addition, effects of

Document ID: 0.7.19.1363.1

Author(s)	Title	Publication	Findings/Recommendations
			the high stress week carried over into the weekend, interfering with recuperation/restoration. Might be important to keep in mind when scheduling time off after numerous high stress extended work days during a disaster response (i.e., the longer the duration of the extended work hours period, the longer the amount of time should be allowed for recuperation/restoration).
X. Dong	Long work hours, work scheduling and work-related injuries among construction workers in the US	Scand J Work Environ Health 2005: 31(5), 329-335	Examined possibility of connections between number of hours worked and safety outcomes among construction workers, using a national sample of 2,100 construction workers. Study found that when workers worked more than 40 hrs/wk, injury risk increased slightly; over 50 hrs/wk, risk nearly doubled. Suggestions included providing more on-site breaks during the work day and public policy intervention to establish a ceiling on number of hours worked during a specific time frame.
Unknown	Shift work: too much overtime might compromise safety. (EHS News)	Occupational Hazards 2005: 67(1), 17	Quoted from study conducted by Circadian Technologies, Inc., which found a correlation between increased overtime hours and health care and worker's compensation costs. Also indicated that high overtime levels can lead to increased stress, absenteeism, and turnover, which also can

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			compromise workplace health and safety.
R. Cordeiro, A. Dias	Stressful life events and occupational accidents	Scand J Work Environ Health 2005: 31(5), 336-342	Population-based case-control study of the influence of non-work-related factors on occupational accidents experienced by108 workers in Botucatu, Brazil; findings indicated contribution to accident levels by variables outside the work environment.
Editorial	Long work hours are a safety risk – causes and practical legislative implications	Scand J Work Environ Health 2005: 31(5), 325-327	Recent studies indicate that long work hours should be considered a serious accident-contributing factor; regular breaks may help to prevent accidents in industrial settings; need to increase public's awareness of risks associated with long work hours; recommendation that maximum work shifts not exceed 12 hours and work weeks not exceed 45 hours.
Editorial, M. Kompier	Assessing the psychosocial work environment – "subjective" versus "objective" measurement	Scand J Work Environ Health 2005: 31(6), 405-408	Noted that both "subjective" (e.g., questionnaires) and "objective" (e.g., physiological) measurements are useful data collection tools in job-related stress research. Recommends the Copenhagen Psychosocial Questionnaire (COPSOQ) as being scientifically grounded and because it pays attention to risk evaluation.
R. Kalimo	Editorial: Reversed causality – a need to revisit systems modeling of work-	Scand J Work Environ Health 2005: 31(1), 1-2	Acknowledged the merits of recognizing that the mental health-work characteristics relationship is not a one-way flow, but rather, a non-linear

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
	stress-health relationships		cybernetic system with continuous feedback (i.e., mental health affects work as well as the other way around).
A.E. Dembe, J.B. Erickson, R.G. Delbos, S.M. Banks	The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the U.S.	Occup Environ Med 2005: 62, 588-597	Analysis of 110,236 job records from a nationally representative sample of American workers over a 13-year period indicated a 61% higher injury hazard rate for workers in jobs with overtime schedules; a 37% increased hazard rate for working at least 12 hours/day; and a 23% increased hazard rate for working at least 60 hours/week. Protective measures suggested included periodic rest breaks, using more people for fewer hours, health promotion education programs, periodic medical surveillance programs, and supportive services.
A. Sharifian, S. Farahani, P. Pasalar, M. Gharavi, O. Aminian	Shift work as an oxidative stressor	Journal of Circadian Rhythms, 2005: 3, 15	Study conducted with 44 workers on a rotational shift schedule to evaluate the effect of night shift working on total plasma antioxidant capacity relating to the role of oxidative stress in the induction of such disorders as cardiovascular disorders. Oxidative stress occurs when the production of free radicals exceeds the body's antioxidant capacity. Study indicated that shift work can act as an oxidative stressor and, as age and body mass index rise, reduce the body's antioxidant system's effectiveness. Suggested special dietary regime, including antioxident agents.

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
A. Kerin, A. Aguirre	Improving health, safety and profits in extended hours operations (shift work)	Industrial Health 2005: 43, 201-208	Promotional article focusing on benefits of training in shift work lifestyle management CIRCADIAN offers for managers, employees, and families. Claims significant reductions in sleep, gastrointestinal, caffeine consumption, and family relationship issues following their training.
C. Fritz, S. Sonnentag	Recovery, health, and job performance: Effects of weekend experiences	J of Occ Health Psych, 2005, 10(3), 187-199	Study of 87 emergency medical service workers in Germany to examine the effects of weekend experiences on the extent of recovery from the work week. Findings included positive effects of social activities during the weekend in terms of decreased burnout and increased general well-being and negative effects of non-work-related hassles on both well-being and post weekend work performance. Has potential implications for disaster response situations once the emergency/rescue phase has passed, but extended and/or around-the-clock work hours are still on-going.
P. Tucker, C. Rutherford	Moderators of the relationship between long work hours and health	J of Occ Health Psych, 2005, 10(4), 465-476	Study of 372 British train drivers to determine the relationship between work hours and self-reported health as moderated by reasons for working overtime (e.g., voluntary/mandatory), schedule autonomy, and degree of social support. Found limited evidence of a relationship between long weekly work

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			hours and negative health effects among workers who lacked both schedule autonomy and social support.
OSHA	Quick Card: Protect Yourself Heat Stress (2005)	www.osha.gov	Short publication that may be used as a training tool for workers. Includes quick tips on factors leading to heat stress, symptoms of heat exhaustion, symptoms of heat stroke, preventing heat stress, and what to do for heat related illnesses.
B.A. Jackson, J.C. Baker, M.S. Ridgely, J.T. Bartis, H.I. Linn	Protecting Emergency Responders: Vol. #: Safety Management in Disaster and Terrorism Response	2004, DHHS(NIOSH) Publication NO. 2004-144; RAND Publication No. MG-170	Report based on post-9/11 research as well as experiences with the Northridge earthquake and Hurricane Andrew. Calls for improving responder health maintenance by preparing and implementing sustainability measures, including appropriate work/rest ratios when dealing with extended duration responses.
S. Folkard, D.A. Lombardi	Work schedules: shift work and long work hours – modeling the impact of the components of long work hours on injuries and "accidents"	Conference on Long Working Hours, Safety, and Health: Toward a national research agenda, April 29-30, 2004, CDC/NIOSH	Effort to develop a statistical model based on trends in the relative risks of accidents relating to working hours. Identified a deterioration in performance and alertness on 12-hr shifts in comparison with 8-hr shifts and a related risk of accidents; increased risk of accidents as the day progresses, with the highest risk on the night shift; and increased risk over successive night shifts. Identified factors to be considered when looking at effects of work schedules: number of hours worked per shift, number of hours

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			worked per week, and number of successive shifts worked.
C.C. Caruso, E.M. Hitchcock, R.B. Dick, J.M. Russo, J.M. Schmidt	Overtime and extended work shifts: recent findings on illnesses, injuries, and health behaviors	CDC/NIOSH, April 2004	Integrative review of 52 recently published research reports examining the connection between long working hours and illnesses, injuries, health behaviors, and performance. Found a pattern of deteriorating performance on psychophysiological tests and injuries while working long hours, especially with very long shifts and when 12-hour shifts were combined with more than 40/hrs/wk. Ninth-12th hrs associated with feelings of decreased alertness, increased fatigue, lower cognitive function, reduced vigilance, and increased injuries.
Alberta Human Resources and Employment	Fatigue, Extended Work Hours, and Safety in the Workplace (ERG015, 2004)	http://employment.alberta.ca/cps/rde/xchg/hre/hs.xsl/563.html	Workplace Health and Safety Bulletin that discusses fatigue, extended work shifts, and safety in the workplace. Includes sections on: Sleep Loss and Sleep Disturbances, Extended Hours of Work, Time of Day and Incidents, Health and Safety Issues, and Coping at Work.
National Wildfire Coordination Group	Interagency Incident Business Management Handbook, Work/Rest and Length of Assignment Standards (2004)	http://www.nwcg.gov/teams/ibpwt/documents/personnel/nwcg_wr-loa_2004.htm	Guidelines developed by an interagency workgroup that address designing work/rest schedules for wildland firefighters. Includes work/rest guidelines and length of assignment. Recommendations: Generally provide for a 2:1 work/rest schedule so that for

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			every 2 hours of work or travel, one hour of sleep and/or rest is provided. Assignment length generally set to 14 days of work with 2 days off. Also provides guidelines for back to back assignments and extending assignments.
S. Folkard & P. Tucker	Shift work, safety and productivity	*Occupational Medicine*, 2003; 53: 95-101.	Reviews findings of a number of studies of safety and productivity during different work shifts, concluding that both safety and productivity are reduced at night. Of particular concern are the number of successive night shifts, the length of the night shifts, and the provision of breaks within them.
Weston Solutions	Fatigue considerations and health and safety (Power Point presentation)	Sept. 29, 2003	Power Point presentation summarizing effects of extended work schedules and presenting effective countermeasures.
A. Baker, K. Heiler, S.A. Ferguson	The impact of roster changes on absenteeism an incident frequency in an Australian coal mine	Occup Environ Med 2003: 60, 43-49	Examined the impact on employee health and safety of changes to the roster system in an Australian mine – particularly focusing on changes from 8-hr to 12-hr shifts. The study did not find significant negative effects from a 12-hr pattern, although there were peaks in accident/incident rates in the 10^{th} hr on day shifts and the 12^{th} hr on night shifts.
N.W.H. Jansen, L.G.P.M. van Amelsvoort, T.S. Kristensen, P.A. van den	Work Schedules and fatigue: A prospective cohort study	Occup Environ Med 2003, 60; 47-53	Study of 12,095 workers as part of the Maastricht Cohort Study on Fatigue at Work found greater levels of fatigue among three- and five-shift workers, indicating fatigue as a possible reason

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
Brandt, I.J. Kant			for quitting shift work. Also noted that perceived job characteristics might play a role in the findings.
K.B.Parkes	Shift work and environment as interactive predictors of work perceptions	J of Occ Health Psych, 2003, 8(4), 266-281	Study of on-shore- and off-shore oil industry personnel working shift work regarding environmental effects on job perception (e.g., satisfaction). Findings indicated that greater availability of around-the-clock supporting resources (e.g., meals, recreation facilities, supervisory support) for off-shore installations resulted in more favorable job perceptions by off-shore shift workers. Has potential implications for disaster response situations once the emergency/rescue phase has passed, but extended and/or around-the-clock work hours are still on-going.
P. Tucker, S. Folkard, I. MacDonald	Rest breaks and accident risk	The Lancet, 2003, 361(9358), 680	Examined the effectiveness of 15-minute rest breaks per 2 hrs of work at a British engineering company, finding them effective in preventing the accumulation of accident risks during sustained activities.
S.L.Sauter, et al (National Occupational Research Agenda Work Team)	The changing organization of work and the safety and health of working people	DHHS (NIOSH) Publication No. 2002-116, April 2002	Develops a scientific agenda to address occupational safety and health consequences of the changing organization of work, including the risk to safety and health from long hours of work.
C. Cruz, C. Detweiler, T.	A Laboratory Comparison of Clock-	2002, DOT/FAA/AM-02/8	Study examined effects of clockwise and counter-clockwise rotating shifts. Found

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
Nesthus, A. Boquet	wise and Counter-Clockwise Rapidly Rotating Shift Schedules, Part I. Sleep		that direction of sleep rotation did not necessarily affect sleep or fatigue ratings.
Y. Liu, H. Tanaka	Overtime work, insufficient sleep, and risk of non-fatal acute myocardial infarction in Japanese men	Occup Environ Med 2002: 59, 447-451	Case control study conducted in Japan (260 cases/445 controls) to examine the relationship between work hours, hours of sleep, and the risk of acute myocardial infarction (AMI). Findings indicated progressively increased likelihood of AMI with an increase in hours worked (e.g., greater than 61 hrs/week) and with lack of sleep (e.g., less than 5 hrs/night for 2 or more days a week). There also was an indication of a relationship with few days off in the month preceding the AMI.
M.D. Johnson, J. Sharit	Impact of a change from an 8-h to a 12-h shift schedule on workers and occupational injury rates	Intl J of Indust Ergonomics 2001: 27, 303-319	Study of the impact of moving from an 8 hr to a 12 hr rotating schedule found no significant effects on the occupational injury rate. Also found greater work satisfaction with the 12 hour schedule as it allowed more time for family, social activities, etc.
S.L. Ettner, J.G. Grzywacz	Workers' perceptions of how jobs affect health: a social ecological perspective	J of Occup Health Psych 2001: 6(2), 101-113	In a national study, 2,048 workers were asked to rate the effects of their jobs on their physical and mental health. Individuals who worked nights or more than 45 hrs/wk were more likely to report negative effects.
A. Feyer	Editorial: Fatigue:	BMJ: 2001, 322, 808-809	Urges serious attention to fatigue-related

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
	Time to recognize and deal with an old problem		issues, particularly relating to driving; pointed out that driving after 17-19 hours without sleep is the equivalent to driving with a blood alcohol level of .05%.
K. Reid, D. Dawson	Comparing performance on a simulated 12-hour shift rotation in young and old subjects	Occup Environ Med 2001: 58, 58-62	Study suggests that age (i.e., older than 40) is an important factor in performance during a 12-hour shift rotation; performance of older subjects was consistently lower than that of younger subjects.
J.M. Harrington	Health effects of shift work and extended hours of work	Occup Environ Med 2001: 58, 68-72	Concludes that work involving long hours or abnormal night-day schedules disrupts the circadian rhythm, which can negatively affect performance, sleep patterns, accident rates, mental health, and cardiovascular mortality.
Assistant Secretary J. Henshaw (OSHA)	Interpretive letter addressed to C. Terhorst, dated 10/17/01	www.osha.gov	Acknowledges that OSHA does not have a specific standard regarding heat stress in the workplace but that OSHA has previously used the General Duty Clause to cite employers that have allowed employees to be exposed to potential serious physical harm from excessively hot work environments. Identifies a range of feasible and acceptable methods to be used to reduce heat stress hazards in workplaces including allowing workers to drink water liberally, establishing a work/rest regimen so that exposure time in high temperatures is reduced, and developing

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			a heat stress program (including training, medical screening, acclimatization, and first aid).
NIOSH	Health Hazard Evaluations: *Occupational Exposure to Lead* 1994 to 1999 (2001)	www.cdc.gov/niosh	The Health Hazard Evaluations and Technical Assistance (HETA) program responds to requests from employers, employees, employee representatives, other Federal agencies, and State and local agencies. The typical HETA response to a request for assistance results in an evaluation of the workplace to determine if chemical, physical, biological, or other agents are hazardous to workers. The HETA program administers health hazard evaluations (HHEs) of occupational exposure to lead and other substances. One hundred thirty-nine lead-related HHEs were conducted from 1990 to 1999. This document presents titles and summaries of the 31 HHEs related to lead that were completed between 1995 and 1999.
H.B. Pressler	Nonstandard work schedules and marital instability	Journal of Marriage and the Family 2000: 62, 93-110	A study of 3,476 married couples indicated that night and rotating shifts significantly increased the odds of marital instability for couples with children.
ACTU (Australian Council of Trade Unions)	Health and safety guidelines for shift work and extended working hours	Sept. 2000 D NO. 66/2000	Identifies health and safety and family and social effects of shift work and extended work hours and recommends guidelines to deal with these risks, including limitations on the number of

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			hours worked per week and the provision of adequate breaks.
N. Kawakami, S. Araki, N. Takasuka, H. Shimizu, H. Ishibashi	Overtime, psychosocial working conditions, and occurrence of non-insulin dependent diabetes mellitus in Japanese men	J Epidemiol Community Health 1999: 53, 359-363	Study of workers at a Japanese electrical company indicated that longer overtime (i.e., more than 50 hrs/mo) and the use of new technology were risk factors for the development of non-insulin dependent diabetes mellitus in male workers.
J. Horne, L. Reyner	Vehicle accidents related to sleep: a review	Occup Environ Med 1999: 56, 289-294	Examines sleep-related vehicle accidents (SRVAs) and concludes that SRVAs can be reduced by greater education of employers and drivers about the dangers of driving while sleepy and about the most vulnerable times of the day for SRVAs (e.g., night shift work and driving home afterwards as well as mid-afternoon for older drivers).
R. Fairfax (OSHA)	Standard Interpretations Memorandum - OSHA policy regarding PEL adjustments for extended work shifts (11/10/99)	www.osha.gov	The memorandum resolves issues concerning adjustments of the PEL during extended work shifts. The methods discussed apply to exposures to the noise levels of Table G-16 of 29 CFR 1910.95 or substances found in Subpart Z. The only standards that require PEL adjustments are the lead standards in construction and general industry. The memorandum details two methods that OSHA Compliance Officers may use when employees work extended work shifts beyond 8 hours. One is to sample the worst continuous 8-

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			hour work period of the extended shift. The second is to collect multiple samples over the entire work shift and calculate the PEL based upon the worst 8 hours of exposure during the entire work shift.
V.M. Ognianova, D.L. Dalbokova, V. Stanchev	Stress states, alertness, and individual differences under 12-hour shiftwork	Intl J of Indust Ergonomics 1998: 21, 283-291	Study of the effects of 12-hr shifts on the alertness and stress states of 22 thermoelectric power plant operators found moderate levels of increased distractibility and reduced alertness and concluded that this did not affect the workers' efficiency and reliability on 12-hr night shifts.
R. Rosa, M. Bonnet, L. Cole	Work Schedule and task factors in upper-extremity fatigue	Human Factors 1998: 40, 150-159	Laboratory study with 16 participants to test the combined effects of work schedules and task factors on upper extremity fatigue during 8-hr and 12-hr shifts. Three repetition rates and 3 torque loads were used in the simulated manual assembly task; workers self-adjusted work cycle duration to maintain moderate fatigue levels. Increased load levels and repetition rates resulted in more rapid onset of fatigue with increased work duration and during night shifts, with highest fatigue levels observed during 12-hr night shifts and similar levels observed after a week of 8-hr night shifts and a week of 12-hr day shifts. Shorter work cycles or more frequent rest periods were suggested for

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			night or extended hour day shifts.
L. Smith, S. Folkard, P. Tucker, I. Macdonald	Work shift duration: a review comparing 8-hour and 12-hour shift systems	Occup Environ Med 1998: 55, 217-229	Analysis of shift work-related literature had equivocal findings indicating both positive (e.g., improvements in family relations, increased social activities, lower commuting costs) and negative (e.g., potential for build up of fatigue, sleep curtailment, limitations to educational and recreational opportunities) aspects of 12-hr shift work; identified need for further research into possible long-term aspects of 12-hr shifts.
S. Sokejima, S. Kagamimori	Working hours as a risk for acute myocardial infarction in Japan: a case-control study	BMJ 1998: 317, 775-780	Study of 185 Japanese men admitted to hospital with acute myocardial infarction (and 331 controls) found a U-shaped relationship between hours of work and the risk of acute myocardial infarction. The increased work hours were associated with a higher daily mean blood pressure, while the shorter working hours were associated with either a premorbid condition or the loss of employment.
J.C. Duchon, T.J. Smith, C.M. Keran, E.J. Koehler	Psychophysiological manifestations of performance during work on extended workshifts	Intl J of Indust Ergonomics 1997: 20, 39-49	Prospective study of workers in a western Canadian metals mine changing from 8-hr to 12-hr shifts found high levels of acceptance by workers as well as improved sleep; however, 12-hr shifts were associated with lower work effort attributed to workers pacing themselves to cope with the longer schedule.

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
R.R. Rosa, M.J. Colligan	Plain language about shift work	NIOSH July 1997	Examines effects of shift work and offers suggestions on coping with shift work for organizations and for individuals.
G. Belenky	Sleep, sleep deprivation, and human performance in continuous operations	Walter Reed Army Inst of Research, 1997, www.usafa.af.mil/jscope/JSCOPE97/ Belenky97/Belenky97.htm	Examination of the effects of sleep deprivation on battlefield performance with the conclusion that 7-8 hrs sleep/night are necessary to sustain high levels of performance over days and weeks, Consequences of sleep deprivation can include reduced mental abilities, particularly higher order mental abilities that sustain situational awareness and tactical grasp.
K. Sparks, C. Cooper, Y. Fried, A. Shirom	The effects of hours of work on health: A meta-analytic review	J of Occup & Org Psych 1997, 70:391-408	Meta-analysis of 19 studies/qualitative analysis of 12 studies found some support for a relationship between increased hours of work and increased health symptoms, particularly heart disease. Findings may be moderated by the nature of the job, the working environment, age, and personal control over working hours.
M. Westman, D. Eden	Effects of a respite from work on burnout: Vacation relief and fade-out	J of Applied Psych, 1997, 82(4), 516-527	Examined the extent of relief from job stress and burnout provided by vacation respites, finding that vacations have an abrupt, positive effect that fades gradually, disappearing within 3 weeks. Calls for research into additional beneficial ways to facilitate recovery from job stress (e.g., short daily respites such as time off for physical exercise,

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			meditation, "power naps," etc.).
P. Tucker, J. Barton, S. Folard	Comparison of eight and twelve hour shifts: impacts on health, wellbeing, and alertness during the shift	Occup & Envir Med 1996: 767-772	Study of male chemical workers working 12-hr (n=92) and 8-hr (n=70) shifts found similar levels of psychological health and gastrointestinal complaints for both shift types and fewer cardiovascular disease symptoms among the 12-hr shift workers; 12-hr shift workers reported less disruption to social lives; both groups reported similar levels of alertness during the morning, although the 12-hr group experienced lower levels of alertness in the afternoon. Authors concluded that sequencing and timing of shifts might be more important than duration.
R.R. Rosa	Extended workshifts and excessive fatigue	J Sleep Res 1995: 4, Supple. 2, 51-60	Urges precautions in the use of extended work shifts, particularly when going 6-12 hrs past a 12-hr shift; also points out specific vulnerability to fatigue and sleepiness of workers in the final 4 hrs of a 12-hr night shift.
P. Totterdell, E. Spelten, L. Smith, J. Barton, S. Folkard	Recovery from work shifts: how long does it take?	J of Applied Psych, 1995, 80(1), 43-57	Study examined the amount of time needed to recover from day and night work shifts and found benefits from increased time for recovery (2 days rather than 1 day), particularly after night shifts. Findings also may be applicable to periods of extended work hours.
D.M. Jones, A.P. Smith	Handbook of Human Performance: Vol. 3:	Academic Press – Harcourt Brace Jovanovich, 1992, London	The type of sleep essential for brain restitution occurs during the first 5 hrs of

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
(Eds.)	State and Trait		sleep; sleep during the inappropriate circadian phase is more difficult to maintain, more fragmented, and less restorative; sleep and performance are closely tied to the rising and falling of the body core temperature, with performance peaking with rising temperature and falling with the temperature trough (i.e., 2-6 am).
Office of Technology Assessment	Biological rhythms: implications for the worker: new developments in neuroscience	Congress of the U.S., 1991	Excellent, although a bit dated, overview of circadian rhythms, and how they can be affected by both shift work and extended work hours, particularly when extended into the evening and night hours. Points out reductions in efficiency and effectiveness when the circadian rhythm is disrupted, which have implications for decision making competence as well as for occupational safety.
L. White, B. Keith	The effect of shift work on the quality and stability of marital relations	J of Marriage & the Family 1990: 52(2), 453-462	Study of 1,668 married women and men indicated that shift work significantly increases the probability of divorce. Authors speculate that shift work encourages more independent life styles, reducing spouses' psychological dependence, and increases exposure to alternative attractions.
S.L. Sauter, L.B. Murphy, J.J. Hurrell, Jr.	Prevention of work-related psychological disorders: A national strategy proposed by	Amer. Psychologist, 1990, 45(10), 1146-1158	Recognizes the importance of psychological disorders as a leading occupational health problem. Identifies the extent of individual control and

Document ID: 0.7.19.1363.1

Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
	NIOSH		involvement in work schedule determination as an important factor relating to negative health outcomes. Makes recommendations for controlling psychological risks factors at work, including providing for sufficient recovery from demanding tasks and/or allowing for increased individual job control.
USDA Forest Service	Fatigue Awareness Power Point Pres.	Missoula Technology and Development Center	Educational presentation on factors leading to fatigue, signs and symptoms of fatigue, strategies for dealing with fatigue. Recommends: 2:1 work/rest ratio, 14 hr shifts, 14-day deployments, and leadership monitoring and management of worker fatigue.
OSHA	Frequently Asked Questions: Extended Unusual Work Shifts	www.osha.gov	Short publication discussing what extended work shifts and unusual shifts are, what workers should know about the hazards, and what can be done to address the hazards.
DOT	Fatigue Resource Directory	http://human-factors.arc.nasa.gov/zteam/fredi/home-page.html#toc	The directory was originally compiled in conjunction with the NASA/NTSB Symposium Managing Fatigue in Transportation: Promoting Safety and Productivity which was held in Tysons Corner, Virginia on November 1-2, 1995. The directory is now maintained by the DOT. The purpose of the Fatigue Resources Directory is to provide transportation-industry members with current, accessible information on

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Appendix C: References

Author(s)	Title	Publication	Findings/Recommendations
			resources available to address fatigue in transportation. It includes section on: Fatigue in Transportation, Countermeasures, Government Activities, Industry Activities, Public Interest Groups, and Scientific Information.
OSHA	Safety and Health Topics Page on Heat Stress	www.osha.gov	Index of weblinks to OSHA and other organizations resources on Heat Stress. Weblinks are grouped under: What OSHA standards apply, What are the hazards and possible solutions associated with heat stress, and What additional information is available.

Document ID: 0.7.19.1363.1

Received(Date): Mon, 21 Jun 2010 12:13:47 -0400
From: Matthew.Thorburn@noaa.gov
Subject: Re: My thoughts on key messages
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Cc: David.Kennedy@noaa.gov, Jainey.Bavishi@noaa.gov, Joe.Inslee@noaa.gov,John.Rapp@noaa.gov, Shelby.Walker@noaa.gov

Think about working in a couple words on community recovery and ecomonic recovery. NOAA has had a "resilient coastal communities" theme running for a couple of years. Might be good to hook this back into that message.
Matt

----- Original Message -----
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Date: Monday, June 21, 2010 12:08 pm
Subject: My thoughts on key messages

> My Thoughts:
> 1. Use Science to Respond
> 2. Protect human health
> 3. Protect our fish and wildlife
> 4. Assess Damage
> 5. Restore and Recover
>
> If you just want 3 then:
> 1. Use Science to Respond
> 2. Protect human health, fish and wildlife
> 3. Assess Damage, Restore and Recover
>
> Here is how some of our work falls out into the above categories
> 1. Use Science to Respond (subsea, surface and shoreline)
> SSCs, weather, oceanographic data, modeling, undersea
> strategies, at
> sea actions (dispersants, in situ burn, boom placement), shoreline
> clean-up, alternative technologies, scientific workshops
> 2. Protect human health
> Seafood safety testing, fisheries closures, assisting EPA with
> air
> monitoring
> 3. Protect our fish and wildlife
> Response strategies, booming, rescue, rehab, coordination with
> ops
> on EFH, ESA, MMA, etc.
> 4. Assess Damage
> SCAT, damage assessment sampling and evaluation
> 5. Restore and Recover
> Recommendations on cleanup, alternative technologies such as
> bioremediation, scientific/academic involvement, long-term strategies
>
> David.Kennedy@noaa.gov wrote:
> > FYI
> >
> > ----------
> -------
> >
> > Subject:
> > FW: The federal DWH effort

> > From:
> > Mary Glackin <Mary.Glackin@noaa.gov>
> > Date:
> > Sun, 20 Jun 2010 18:19:23 -0400
> > To:
> > David Kennedy <David.Kennedy@noaa.gov>
> >
> > To:
> > David Kennedy <David.Kennedy@noaa.gov>
> >
> >
> > Here is the other one.
> >
> >
> >
> > *From:* Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
> > *Sent:* Thursday, June 17, 2010 1:33 PM
> > *To:* Justin Kenney; 'Mary.Glackin@noaa.gov'; David Kennedy
> > (David.Kennedy@noaa.gov); Andrew Winer; Margaret Spring
> > *Cc:* Jane Lubchenco
> > *Subject:* The federal DWH effort
> >
> >
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> > This may be too in the weeds, but it may trigger some ideas.
> Just
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> >
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> >
> > The
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> > 8. Restore/Recover health of the Gulf and Gulf Coast
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> > 3. Hire Locals
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> > 4. Work closely with state and local governments
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Think about working in a couple words on community recovery and ecomonic recovery. NOAA has had a "resilient coastal communities" theme running for a couple of years. Might be good to hook this back into that message.
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Date: Monday, June 21, 2010 12:08 pm
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> > Sun, 20 Jun 2010 18:19:23 -0400
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> > David Kennedy <David.Kennedy@noaa.gov>
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> > David Kennedy <David.Kennedy@noaa.gov>
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> > *From:* Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
> > *Sent:* Thursday, June 17, 2010 1:33 PM
> > *To:* Justin Kenney; 'Mary.Glackin@noaa.gov'; David Kennedy
> > (David.Kennedy@noaa.gov); Andrew Winer; Margaret Spring
> > *Cc:* Jane Lubchenco
> > *Subject:* The federal DWH effort
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>

Received(Date): Mon, 21 Jun 2010 15:30:30 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: Sen. shelby ltr
To: "kelly.quickle@noaa.gov" <Kelly.Quickle@noaa.gov>
Cc: "Richard M. Love" <Richard.M.Love@noaa.gov>,Nancy Wallace <Nancy.Wallace@noaa.gov>,"Shelby Walker (Shelby.Walker@noaa.gov)" <Shelby.Walker@noaa.gov>,John Gray <John.Gray@noaa.gov>, "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,Steven Gallagher <Steven.Gallagher@noaa.gov>

Kelly,

Richard is sending the letter back to you with changes made by Dr. Lubchenco on the letter to him on dispersants.

This will need expedited review by senior scientists familiar with dispersants – so I am cc-ing DWH staff, especially Shelby Walker.

Please get them a copy of the markup so they can get working on the substantive edits.

John/Steve – fyi. What is status of briefing for Sen. Shelby? Want to coordinate letter.

Nancy – fyi re clearance thru system.

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

(202) 482-3436

Received(Date): Mon, 21 Jun 2010 15:36:38 -0400
From: John Gray <John.Gray@noaa.gov>
Subject: RE: Sen. shelby ltr
To: Margaret Spring <Margaret.Spring@noaa.gov>,"kelly.quickle@noaa.gov" <Kelly.Quickle@noaa.gov>
Cc: "Richard M. Love" <Richard.M.Love@noaa.gov>,Nancy Wallace <Nancy.Wallace@noaa.gov>,"Shelby Walker (Shelby.Walker@noaa.gov)" <Shelby.Walker@noaa.gov>,John Gray <John.Gray@noaa.gov>, "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,Steven Gallagher <Steven.Gallagher@noaa.gov>

I haven't called Shelby's staff and I haven't spoken to Steve yet to discuss this. I will do that this afternoon and then we can figure out the timing on a briefing.

From: Margaret Spring [mailto:margaret.spring@noaa.gov]
Sent: Monday, June 21, 2010 3:31 PM
To: kelly.quickle@noaa.gov
Cc: Richard M. Love; Nancy Wallace; Shelby Walker (Shelby.Walker@noaa.gov); John Gray; 'dwh.staff@noaa.gov'; Steven Gallagher
Subject: Sen. shelby ltr
Importance: High

Kelly,

Richard is sending the letter back to you with changes made by Dr. Lubchenco on the letter to him on dispersants.

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Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

(202) 482-3436

Received(Date): Mon, 21 Jun 2010 16:35:24 -0400
From: Nancy Wallace <Nancy.Wallace@noaa.gov>
Subject: Re: Sen. shelby ltr
To: Margaret Spring <Margaret.Spring@noaa.gov>
Cc: "kelly.quickle@noaa.gov" <Kelly.Quickle@noaa.gov>,"Richard M. Love" <Richard.M.Love@noaa.gov>,"Shelby Walker (Shelby.Walker@noaa.gov)" <Shelby.Walker@noaa.gov>,John Gray <John.Gray@noaa.gov>, "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,Steven Gallagher <Steven.Gallagher@noaa.gov>

Margaret,
The DWH staff has the letter and is working to address the
questions/comments from Dr. Lubchenco.

-Nancy

Margaret Spring wrote:
>
> Kelly,
>
> Richard is sending the letter back to you with changes made by Dr.
> Lubchenco on the letter to him on dispersants.
>
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> Margaret Spring
>
> Chief of Staff
>
> National Oceanic and Atmospheric Administration
>
> U.S. Department of Commerce
>
> 14th & Constitution Avenue NW, Room 5128
>
> Washington, DC 20230
>
> B6 Privacy
>

--
Nancy Wallace
Acting Deputy Chief of Staff
Office of the Under Secretary
14th & Constitution Ave., NW, Room 6015
Washington, DC 20230
phone: B6 Privacy
cell: B6 Privacy

Received(Date): Wed, 23 Jun 2010 09:25:42 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: Re: My thoughts on key messages
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Cc: David.Kennedy@noaa.gov, Jainey.Bavishi@noaa.gov,Beth Dieveney <Beth.Dieveney@noaa.gov>, John.Rapp@noaa.gov,Matthew.Thorburn@noaa.gov, Shelby.Walker@noaa.gov

Dave.Westerholm wrote:

> My Thoughts:
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> 2. Protect human health
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> Recommendations on cleanup, alternative technologies such as bioremediation, scientific/academic involvement, long-term strategies
>
> David.Kennedy@noaa.gov wrote:
>
> FYI

Subject:
FW: The federal DWH effort
From:
Mary Glackin <Mary.Glackin@noaa.gov>
Date:
Sun, 20 Jun 2010 18:19:23 -0400

To:
David Kennedy <David.Kennedy@noaa.gov>
To:
David Kennedy <David.Kennedy@noaa.gov>

Here is the other one.

From: Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
Sent: Thursday, June 17, 2010 1:33 PM
To: Justin Kenney; 'Mary.Glackin@noaa.gov'; David Kennedy (David.Kennedy@noaa.gov); Andrew Winer; Margaret Spring
Cc: Jane Lubchenco
Subject: The federal DWH effort

This may be too in the weeds, but it may trigger some ideas. Just sharing some packaging thoughts.

Here's a reorganized list to consider refining vis a vis the federal response.

The What

1. Kill the well
2. Intercept the oil
3. Clean it up
4. Save Wildlife
5. Protect Seafood Markets
6. Protect Citizen and Worker Health
7. Assess Damage
8. Restore/Recover health of the Gulf and Gulf Coast communities

The How

1. Direct BP
2. Use the best science and scientists
3. Hire Locals
4. Work closely with state and local governments
5. Be open and transparent: Share information widely
6. Facilitate reimbursements/claims

Received(Date): Wed, 23 Jun 2010 10:35:47 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: Re: methane ...
To: Margaret Spring <Margaret.Spring@noaa.gov>
Cc: "KSarri@doc.gov" <KSarri@doc.gov>, "Gilson, Shannon" <SGilson@doc.gov>,"justin.kenney@noaa.gov" <Justin.kenney@noaa.gov>,"'Christopher.Vaccaro@noaa.gov'" <Christopher.Vaccaro@noaa.gov>,"Gray, John" <John.Gray@noaa.gov>, "Costanza, Jennifer" <JCostanza@doc.gov>,"Oil spill staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,Jana Goldman <Jana.Goldman@noaa.gov>

Hi Margaret,
I will make sure folks are appropriately looped in. I've asked OAR/OER to assist in developing this information; Jana Goldman will also help in this effort.
Regards,
Shelby

Margaret Spring wrote:

> All,
>
> In case you are needing it, here is a para on Methane that the Science folks put together yesterday – as you can see more is being developed. This is not cleared as TPs but just a general idea of what we are doing.
>
> Text will need more development for the lay audience and that's where Coms/OLIA can help.
>
> Shelby, can you and the DWH team make sure that the Coms and Leg folks are in the loop?
>
> Thanks!
>
> margaret

From: Shelby Walker <Shelby.Walker@noaa.gov>
To: 'margaret.spring@noaa.gov' <Margaret.Spring@noaa.gov>
Cc: Steve Murawski <Steve.Murawski@noaa.gov>; Robert Haddad <Robert.Haddad@noaa.gov>; Craig Mclean <Craig.Mclean@noaa.gov>

Sent: Tue Jun 22 20:54:12 2010
Subject: [Fwd: Re: Methane]

Hi Margaret,
Here is a short write-up on methane. We are also in the process of developing a more robust set of information (talking points) on methane for broader use.
Regards,
Shelby

· One of the key concerns with the release of methane and other lightweight, soluble hydrocarbons is the consumption (oxidation) of these compounds by aerobic microorganisms in the water column. This process consumes dissolved oxygen in the water column. Depression of the concentration of dissolved oxygen could impact the microbial degradation of larger hydrocarbons in the oil as well as impair or diminish overall biological processes in the water column.

The federal response effort includes active monitoring of the dissolved oxygen concentration. As a requirement of the response effort of injecting chemical dispersants into oil being released from the well, water column sampling has been and continues to be conducted from the R/V *Brooks McCall* and its relief vessel, the R/V Ocean Veritas. This sampling includes measurement of dissolved oxygen concentrations in the region anticipated to be the likely flow field at depth (primarily a southwest axis from the wellhead), as well as the surrounding areas. In addition to the R/V Brooks McCall and Ocean Veritas, dissolved oxygen concentration is a standard measurement on all NOAA research missions conducting sub-surface sampling, such as the recent R/V Gordon Gunter and the on-going R/V Thomas Jefferson cruises.

· Due to the high volatility of methane, methane cannot be detected through standard volatile organic compound analysis and requires instead the deployment of an in situ mass spectrometer in the water column. The R/V Endeavor, a UNOLS vessel, is currently conducting a NRDA-supported mission in the Gulf in the region of the well-head and surrounding areas using this type of instrumentation. However, the primary federal effort has focused on the impact of methane (and other lightweight hydrocarbons) on the dissolved oxygen concentration.

.

Received(Date): Wed, 23 Jun 2010 14:46:16 -0400
From: "Jainey.Bavishi" <Jainey.Bavishi@noaa.gov>
Subject: Strategic objectives
To: John Rapp <John.Rapp@noaa.gov>

1. Use Science to Respond, Assess and Restore
2. Protect Public Safety
3. Protect our Fish and Wildlife
4. Assess Damage
5. Restore and Recover

If you just want 3 then:
1. Use Science to Respond, Assess and Restore
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Here is how some of our work falls out into the above categories
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Response strategies, booming, rescue, rehab, coordination with ops on EFH, ESA, MMA, etc.
4. Assess Damage
SCAT, damage assessment sampling and evaluation
5. Restore and Recover
Recommendations on cleanup, alternative technologies such as bioremediation, scientific/academic involvement, long-term restoration and recovery, including enhancing coastal community resiliency.

Received(Date): Mon, 28 Jun 2010 08:52:51 -0400
From: Margaret Spring <Margaret.Spring@noaa.gov>
Subject: RE: VP visit: topics
To: John Rapp <John.Rapp@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Katya Wowk <Katya.Wowk@noaa.gov>, Brycen Swart <Brycen.Swart@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Jane Lubchenco <Jane.Lubchenco@noaa.gov>,Margaret Spring <Margaret.Spring@noaa.gov>,Monica Medina <Monica.Medina@noaa.gov>, Mary Glackin <Mary.Glackin@noaa.gov>,Lois Schiffer <Lois.Schiffer@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>

I would say fisheries issues in general and frustrations of the fishing industry and how we are trying to help, incl via external affairs.

Margaret Spring

Chief of Staff

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

14th & Constitution Avenue NW, Room 5128

Washington, DC 20230

(202) 482-3436

From: John Rapp [mailto:John.Rapp@noaa.gov]
Sent: Monday, June 28, 2010 8:53 AM
To: _HQ Deep Water Horizon Staff
Cc: Katya Wowk; Brycen Swart; Lauren B Lugo; David Kennedy; Jane Lubchenco; Margaret Spring; Monica Medina; Mary Glackin; Lois Schiffer; 'sally.yozell@noaa.gov'
Subject: VP visit: topics

All,

We haven't been given a deadline yet for developing briefing materials for Dr. Lubchenco's and the VP's visit to the Gulf, but the following are focus areas that came up during the 8 AM call:

- Seafood safety – the protocol was agreed to last week. We need the most up-to-date version of the protocol and we should push the press release to see if we can get the States to sign onto it. The protocol is likely to be announced in FL.
- Hurricane – This will likely just be conversation for the trip, but all pertinent info is still needed; especially after the articles over the weekend that talked about "toxic storms".
- Long-term restoration – Jainey can provided an update on the long-term restoration

discussion. The tp's should make it evident that we are Trustees.

What are folks thoughts about other topics? Long-term movement of oil, sub-surface oil, dispersants, etc.?

Thanks,
John

Received(Date): Mon, 28 Jun 2010 08:53:10 -0400
From: John Rapp <John.Rapp@noaa.gov>
Subject: VP visit: topics
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Katya Wowk <Katya.Wowk@noaa.gov>, Brycen Swart <Brycen.Swart@noaa.gov>,Lauren B Lugo <Lauren.B.Lugo@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Jane Lubchenco <Jane.Lubchenco@noaa.gov>,Margaret Spring <Margaret.Spring@noaa.gov>,Monica Medina <Monica.Medina@noaa.gov>, Mary Glackin <Mary.Glackin@noaa.gov>,Lois Schiffer <Lois.Schiffer@noaa.gov>,"'sally.yozell@noaa.gov'" <Sally.Yozell@noaa.gov>

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We haven't been given a deadline yet for developing briefing materials for Dr. Lubchenco's and the VP's visit to the Gulf, but the following are focus areas that came up during the 8 AM call:

- Seafood safety – the protocol was agreed to last week. We need the most up-to-date version of the protocol and we should push the press release to see if we can get the States to sign onto it. The protocol is likely to be announced in FL.
- Hurricane – This will likely just be conversation for the trip, but all pertinent info is still needed; especially after the articles over the weekend that talked about "toxic storms".
- Long-term restoration – Jainey can provided an update on the long-term restoration discussion. The tp's should make it evident that we are Trustees.

What are folks thoughts about other topics? Long-term movement of oil, sub-surface oil, dispersants, etc.?

Thanks,
John

Received(Date): Thu, 01 Jul 2010 14:51:46 -0400
From: Joe Inslee <Joe.Inslee@noaa.gov>
Subject: Re: Dispersant impacts on corals and marshes
To: Jessica Kondel <Jessica.Kondel@noaa.gov>
Cc: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>

Jessica-
No worries..here you go
-Joe

oil spill and coral reed handout -
http://response.restoration.noaa.gov/book_shelf/1964_coral-reef-fact-sheet-v3.pdf

also a more general report on oil spills and coral reefs -
http://response.restoration.noaa.gov/book_shelf/70_coral_full_report.pdf

oil spill and marshes -
http://www.nrt.org/production/NRT/NRTWeb.nsf/AllAttachmentsByTitle/SA-1061NRT_Marsh_Cleanup_Options_DWH.06032010.pdf/$File/NRT_marsh_cleanup_overview_6-15.pdf?OpenElement

http://response.restoration.noaa.gov/book_shelf/965_HelpHind.pdf

Jessica Kondel wrote:
> Hi--
> During today's briefing on the Hill, Rep Wasserman Schultz asked about
> the impacts of dispersants on corals and marsh areas. Dr. Lubchenco
> would like me to follow up with her office with any information we can
> provide. I looked through fact sheets, Q&As, etc. but didn't see
> anything that would help answer the Congresswoman's question. Do we
> have information on the impacts (or potential impacts) as well as any
> information on any monitoring of this issue?
>
> Thanks.
> Jessica

--
Joe Inslee
Policy/Outreach Assistant
Assessment and Restoration Division
NOAA Office of Response and Restoration
1305 East-West Highway SSMC 4, Rm. 10219
Silver Spring, MD 20910 Office B6 Privacy ext. 202
Cell B6 Privacy
Fax B6 Privacy

Received(Date): Fri, 02 Jul 2010 15:32:17 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Re: dispersants
To: Jane Lubchenco <Jane.Lubchenco@noaa.gov>
Cc: William Conner <William.Conner@noaa.gov>,David Kennedy <David.Kennedy@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>,"ed.levine@noaa.gov" <Ed.Levine@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,"dwh.leadership@noaa.gov" <DWH.Leadership@noaa.gov>,Robert Haddad <Robert.Haddad@noaa.gov>, John Oliver <John.Oliver@noaa.gov>

Dr. Lubchenco,
I'm checking with Bill as he had begun to collect the information for next week's hearing testimony with Dr. Robinson. I will work with him, Steve, John Oliver and some of our field SSCs on the initial draft which I hope to put together by tomorrow. On Sunday, I will send the draft to the larger group of NOAA personnel who have been dealing with the dispersant issue for review followed by circulation among NOAA leadership. That should give us Monday to finalize before your meeting on Tuesday/Wednesday. Shelby (with John as back up) will be the war room POCs if we need help with format, assembling attachments, etc.
v/r
Dave

Jane Lubchenco wrote:
>
> NOAA folks: A subset of the Principals had a conference call this
> afternoon to discuss dispersant policies and how to move forward.
> Among other things, we agreed to pull together a short (2-page)
> synopsis of our knowledge of dispersants (i.e., dispersants writ
> large, i.e., dispersants, breakdown products of dispersants, and
> dispersed oil). Focus is on the science, both knowns and unknowns.
>
> NOAA has the lead on this item. It should include:
>
> 1. what we know and
>
> 2. don’t know
>
> 3. what the unresolved questions are
>
> 4. what monitoring and research is underway (and what have we learned
> from it to date)
>
> 5. should be set in motion asap to resolve the critical unresolved
> questions
>
> 6. what is the biggest potential for regret
>
> 7. what alternatives might exist (physically atomizing oil subsurface
> vs using dispersants to do that)
>
> Principals plan to convene again on Tues or Wed, and I’ll need to
> circulate a document to the others prior to the call.
>
> We already have good syntheses of some of this from our workshop and
> other efforts. (It would be good to have those summaries as
> attachments.) But some of the above needs to be drafted de novo.

>
> Dave W: can you please suggest the way forward to accomplish this task?
> Many thanks!
>

Received(Date): Sun, 04 Jul 2010 18:56:04 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: Dispersant summary for Principals
To: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>,William Conner <William.Conner@noaa.gov>
Cc: Robert Haddad <Robert.Haddad@noaa.gov>,Shelby Walker <Shelby.Walker@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>, Ed Levine <Ed.Levine@noaa.gov>,Doug Helton <Doug.Helton@noaa.gov>, Alan Mearns <Alan.Mearns@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,John Rapp <John.Rapp@noaa.gov>
NOAA Input for Principals Meeting v_1.1doc-1 sam comments.do

Dave,

Thanks for sharing this document. I am attaching my comments and edits in a track changes mode. Overall I think we are being a bit too sanguine about the use of these products. It is clear that there has been little relevant testing at depth and offshore, - the work on *Menidia* (a fresh water and estuarine species) for example is likely not relevant to the much more sensitive marine fish (oceanic) actually encountering the dispersant and oil mix. One can see this in the graph in attachment 3 which actually includes red drum (a Gulf species) and which seems to be more sensitive than silversides. So too, the sensitivity of eggs and larvae needs to be accounted for as does the potential for phototoxicity.

The part about ecological risk assessment is very important. So too is the work on first order calculations on the extent and concentration of oil and dispersants. Until we understand this it will be difficult to understand the potential magnitude of dispersant impacts or even better bound the unknowns in this issue.

-Steve

p.s. happy 4th!

Dave.Westerholm wrote:

> To all:
> Attached is the draft document for your review.
> As explained earlier, we understand that some of you will not be able to provide input because of previous commitments today. However if you have time to review, please provide edits to Bill Conner tonight (we are shooting for 8pm). He will incorporate these comments into a draft product for leadership and final review tomorrow (will be sent out sometime early tomorrow morning), which will give us time to make any changes before Dr. Lubchenco's meeting on Tuesday/Wednesday. Remember, in your review that we are trying to provide a framework for the Principals to understand the dispersant decision-making process being careful in this document not to advocate "for or against" their use. One area that did not get much attention in the draft was "other alternatives" that may have not be thought of. If anyone has thoughts we can incorporate those and add attachments if appropriate. Also in terms of knowledge gaps and future areas of study, we might also mention that while better studied we don't know all the ecological impacts of other technologies, so this adds additional challenges in

weighing this alternative as part of the response.
Remember this is a work in progress and Thank you for doing this on the Holiday Weekend!
v/r
Dave

John Rapp,
Please send the following note to DWH leadership.
"The draft dispersant document is being circulated and reviewed by the broader team discussed on Friday. If anyone wants to see the working interim product today, please let me, Bill Conner or Dave Westerholm know and we can forward this initial draft. Otherwise Bill Conner will incorporate changes into this draft product and distribute for leadership tomorrow morning."

DRAFT 1.1

Information Synthesis:
Chemical Dispersants for Oil Spills

The purpose of this document is to provide a brief overview of information on oil dispersants in general, and within the context of the Deepwater Horizon BP oil spill.

Dispersant Chemistry

The components of dispersants are determined as part of the EPA regulatory process and are, therefore, well known. Attachment 1 lists the specific components of Corexit 9527 and Corexit 9500. Both of these have been used during the response to the Deepwater Horizon BP spill, with Corexit 9500 being used more frequently. Dispersants contain two types of ingredients: a surfactant and a solvent. Surfactants work like a household detergent to break down the oil into smaller droplets. The solvent carries the surfactant into the oil slick so that the surfactant can work effectively.

Although we know the components of all the dispersants that are listed on the EPA product schedule, the relative amounts of the ingredients are proprietary. We know of no published independent chemical analysis of Corexit 9500 or 9527 that would confirm the ingredients and screen for trace constituents that, if present, might be of concern.

We know of no detailed studies on the degradation rate of Corexit products, or their fate once released into the environment. However, based on the chemistry of the constituents, it is reasonable to expect these dispersants to either dissolve quickly into the water or break down rapidly. There are no known constituents that would biomagnify or move into the food chain. No evidence of the dispersant constituents propylene glycol (1,2-propanediol) and 2-butoxy ethanol, which make up about 30% of the dispersant mixture, have been found during analysis of water samples by NOAA.

Dispersant Effectiveness

Effectiveness means the percent of treated oil that is actually dispersed into the water. Dozens of laboratory and mesocosm effectiveness tests have been done on dispersant products, including many dozens using Corexit 9527 and 9500. For product comparison/selection, EPA has required vendors to conduct and report the ability of their product to disperse two kinds of crude oils: South Louisiana Crude and Prudhoe Bay crude. The required test is the swirling flask test with specific conditions of energy, temperature and other standards. The resulting product schedule list includes only those products that on average dispersed at least 50% of the treated crude oils (See Attachment 2).

These tests have shown that Corexit products can be effective at dispersing oil when applied under the proper conditions. There are three main factors that determine the effectiveness of dispersant application. First, the oil must be "dispersible," meaning that it must respond to the dispersant when it is applied. The oil cannot be too old, weathered, or water-laden. Second, there must be enough wave energy to allow the dispersant to work. Dispersants should not be applied during dead calm conditions. Finally, the dispersant must be accurately applied to the target oil, whether this is done by plane, ship, or sea bed injection.

The following observations indicate that dispersants applied during the Deepwater Horizon BP oil spill response have been effective at dispersing oil:

- Surface Application.
    - Visual observations note a change in surface oil after application of dispersants.
    - Fluorometry data collected after application of dispersants consistently show oil moving down into the water column.

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- Seabed Injection.
  - Visible changes in the surface expression of the oil release are correlated with sea bed injection.
  - Increases in Volatile Organic Compound (VOC) levels at the surface with sea bed injection is interrupted (indicating that more oil is surfacing without dispersant use at the source)
  - Observations of smaller droplets in the source plume when dispersants are being applied at the source.

Further work is needed to understand the actual flow escaping the well and to optimize the ratio of dispersants applied at the source for this type of oil, to ensure that the appropriate amount of dispersant is used to achieve the desired effectiveness without using more dispersant than needed.

Toxicity of Dispersants and Dispersed Oil

Hundreds of short-term, long-term, and chronic toxicity tests have been done on dispersant products, including Corexit 8527 and 9500, in addition to~~and~~ the toxicity tests recently published by EPA. The results, expressed as the concentration that causes mortality in 50% of the test organisms (LC50), generally have been in the range of 10 to over 100 parts per million (ppm). Attachment 3 provides a summary of toxicity findings for Corexit 9500 testing of crustaceans. According to EPA's standard scale for ranking the toxicity of chemicals, most dispersants, including the two Corexit products, are "slightly toxic."

Some tests are conducted on dispersants alone and some are conducted on dispersed oil. The table below illustrates two commonly held understandings about toxicity of Corexit products: 1) Crustacea (crabs, shrimp, and related species) are more sensitive than fish, and 2) Dispersed oil is more generally toxic than dispersant alone.

Table 1. Summary of Dispersant Toxicity Tests: 96-Hour exposure, 5% most sensitive species.

		LC 50 for 5% most sensitive species	
		Fish	Crustacea
Corexit 9500	Dispersant Only	15 ppm	0.8ppm
	Dispersed Oil	0.8ppm	0.6ppm
Corexit 9527	Dispersant Only	10ppm	1-5ppm
	Dispersed Oil	0.2ppm	1-2ppm

Although acute toxicity tests provide some useful insights and guidelines, these simple tests do not reveal all that has been learned about dispersant toxicity. Because dispersants cause the formation of small oil droplets, making the toxic oil components more available by increasing the surface area to volume ratio, it is thought that there is often a pulse of high toxicity shortly after dispersant application. Additional testing has been conducted, showing that the most sensitive species and life stages are affected at concentrations in the range of 1 to 10 ppm (parts per million) for 4-day exposures. Coral eggs and larvae are possibly the most sensitive forms with acute toxicities in the mid- to high- part per billion (ppb) range (reviewed in NRC 2005, Chapter 5). It is this kind of information which is important for conducting ecological risk assessments of monitored and modeled, real-world dispersant applications.

Effects of dispersants on marine wildlife including birds, mammals, reptiles and amphibians represent another category of toxicity concern. What little work has been done on these is reviewed in NRC (2005). The NRC in fact called for more research on this, but since that time, little work has been completed.

Comment [S1]: The second panel shows a number of fish species including silversides, killifish, red drum and Australian rainbowfish

Comment [S2]: Red drum and rainbowfish were "moderately toxic"

Comment [S3]: Attachment 3 seems to have it the other way around

Comment [S4]: Need to cite the source of this

Finally, dispersants should be examined with respect to any implications for sea-food quality. The Food and Drug Administration issued a memorandum on May 14 of this year evaluating Corexit from this perspective (see Attachment 4). FDA reviewed the literature and also assessed the potential for dispersant toxicity based on the chemical makeup of the constituents. Based on these considerations, FDA concluded that "the available information indicates that dispersants have little or no effect on the bioaccumulation potential of oil contaminants, nor do they themselves accumulate in seafood."

Scale of Dispersant and Dispersed Oil Contamination Effects

Responders need to know the geographic scales of petroleum contamination and the extent to which concentrations of dispersants and dispersed oil are causing impacts to marine resources. Work has been conducted to model and map the sizes, shapes and fates of dispersed oil in surface water and deep water. The challenges in this work are immense because modeling assumptions have to be carefully verified and water sampling data documented and subjected to QA/QC screening.

Deep Water. Based on water sampling near the Deepwater Horizon well source in May and early June, and modeling in the same time period we believe that the area of the water mass containing dispersed oil was on the order of 3km wide x 12 to 20 km long, or 36 to 60 sq km. The layer was 100 to 200 meters thick and centered along a constant depth trailing to the southwest. Concentrations of oil appeared to be in the range of low ppm near the source to low ppb at the outer edge.

It is likely that the efficiency of dispersants used at depth is much less that 50%. Some simple calculations illustrate the point. Assuming an average concentration of oil in the sub-surface layer (1100-1300 meters) is 1-2 ppm, and the range of oil dispersed at depth is in a quadrant from due south to due west of the well head to a distance of 10 km, then the total stock of oil in this region is 4-28% of the total cumulative released, depending on the actual flow rate of 35,000-60,000 barrels per day. This calculation assumes no bacterial degradation as of 70 days.

Except near the source, these concentrations of total oil, in the ppb range, are well below concentrations of acute toxicity to the most sensitive species, namely in the 0.1 to 1.0 ppm (100 to 1000 ppb range). Likewise, the concentrations of the dispersant would be 20 or more times lower, in the low ppb range, again, below toxicity thresholds.

Surface Water. On any day oil slicks and emulsions cover thousands of square kilometers of the offshore and near shore sea surface waters. Of this total area, only a small fraction can be treated with dispersants by air operations. But that fraction is important because it is fresh oil emanating from the source and the dispersant operations are mainly in that area 25 to 40 kilometers off shore over deep water (800 to 2000 m), where the thickest concentrations of oil occur.

Monitoring confirms that high concentrations of dispersed oil (in the 100's of ppm range) occur immediately under the treated slicks during the first minutes to hour after treatment. The monitoring data also show that these concentrations decline rapidly and with distance from the treated area to the extent that data show "below detection" in large areas of the approved dispersant application zone. Further, by analogy, concentrations of free dispersant would be 20 or more times lower, although we do not yet have data on their concentrations to confirm this. However, simple three-ere-dimensional trajectory modeling of treated slicks shows that dispersed oil concentrations should be in the low ppb range as the plumes expand over 1 to 3 days, and concentrations of dispersants in the low to sub-part per billion (part per trillion) range.

These concentrations would be expected to impact zooplankton and fish eggs and larvae entrained in the dispersed oil surface water plumes immediately below the treated swaths. However, as mixing and spreading proceeds (in three dimensions) away from the treated swaths, concentrations of

Comment [S5]: "near" seems relative. Within 10 km the JAG reports 1-2 ppm reducing thereafter. However, we can expect that if the rate of degredation is low then the concentration will increase and the distance of detectable oil will spread with time

Comment [S6]: Above the toxicicity for corals is citeds as "mid- to high- part per billion (ppb) range"

Comment [S7]: All the tox results presented so far are 96 hour tests. Sincem, as the document says, we do not know the rate that COREXIT degrades and it is likely to be lower at 5,000 feet deep, then the maximum exposure period may be considerably longer than 96 hours

Comment [S8]: This assumes a single source slick, but there is a continuous source of fresh oil so there is likely an ongoing source of highly toxic (to eggs and larvae) dispersed oil and dispersants

dispersed oil the upper 1 to 10 meters meter of water decline to the extent that organisms entering these area would not be expected to experience toxic concentrations of either oil or free dispersant.

Comment [S9]: Again, this assumes only a single slick not a continuous flow of fresh oil/dispersqant

Regulatory Roles

Subpart J (40 CFR Part 300.910) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (see Attachment 4) specifies that Regional Response Teams (RRT) and Area Committees should, as appropriate include plans for the use of dispersants, as well as other response technologies. RRT 6 has developed the "FOSC Dispersant Pre-approval Guidelines" which includes a flowchart (Attachment 5) that describes the decision path the FOSC must follow for dispersant use, and establishes the circumstances under which dispersant use is pre-approved. One criterion for dispersant use is that the chemical must be included on the NCP Product Schedule. The FOSC and EPA have developed additional directives for the Deepwater Horizon (MC252) incident that impact dispersant use (Attachment 6).

Biggest Potential for Regret

From the information summarized above, it should be clear that using dispersants to respond to an oil spill will have adverse environmental consequences. That is a given. But once oil is in the water, there are no perfect solutions. In combination with other tactics like skimming, booming, and burning, dispersants give us a chance to choose between negative effects caused by oil in the water column and negative effects to wildlife and shorelines caused by oil on the surface. In a workshop convened by NOAA and the University of New Hampshire Coastal Response Research Center, a group of 50 experts concluded that it would be beneficial to continue to consider dispersant use, both at the surface and through sea bed injection, as one of the tools available to the Deepwater Horizon FOSC. After two full days of deliberation, these experts could identify no overriding consideration that would suggest eliminating dispersant use from among the tactics that should be considered. The experts did, however, recognize the need for continued and adaptive monitoring programs, and also for an ongoing ecological risk assessment that would bring in new data and understandings as they are developed during this continuing response (full report available HERE).

Perhaps the biggest potential for regret lies in failing to continue to objectively consider all the response options available, including chemical dispersants

Comment [S10]: Actuially I think the larger regret is that we do not have toxicicity results for the fish, zooplankton and corals in the vicinity of the site either at the surface or at depth, and that the testing continues to be directed to a euryhalene fish species and a freshwater invertebrate over time scales likely irrelevant to this current spill. Also, there is zero data to indicate the effects of extreme pressures on the toxicicity of oil or COREXIT, We can change this with a more directed testing procedure

Priorities for Future Study

Much understanding has been accumulated about dispersants over the last 25 years. But there is more to be learned. Some of the most fruitful areas of investigation from the perspective of this response include:

- Identifying any contaminants or minor constituents in Corexit 9500 and 9527 that would carry special environmental or human health concerns.
- Optimizing dispersant application rates at the well head. Continuing to evaluate and improve monitoring of dispersant application – looking at effectiveness, effects, and concentrations in the water with and without chemical dispersants.
- Conducting an ongoing ecological risk assessment to continue to evaluate dispersant application pros and cons for the Deepwater Horizon.
- Evaluating dispersant effects for wildlife species, particularly in the Gulf of Mexico region.
- Finding and testing additional alternative technologies to consider in addition to chemical dispersants.

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References

EPA 2010. New report on dispersant testinbg

National Research Council 2005. ???

Attachment 1. Chemical Constituents of Corexit 9500 and 9527

The components of COREXIT 9500 and 9527 are:	
CAS Registry Number	**Chemical Name**
57-55-6	1,2-Propanediol
111-76-2	Ethanol, 2-butoxy-*
577-11-7	Butanedioic acid, 2-sulfo-, 1,4-bis(2-ethylhexyl) ester, sodium salt (1:1)
1338-43-8	Sorbitan, mono-(9Z)-9-octadecenoate
9005-65-6	Sorbitan, mono-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs.
9005-70-3	Sorbitan, tri-(9Z)-9-octadecenoate, poly(oxy-1,2-ethanediyl) derivs
29911-28-2	2-Propanol, 1-(2-butoxy-1-methylethoxy)-
64742-47-8	Distillates (petroleum), hydrotreated light
*Note: This chemical component (Ethanol, 2-butoxy-) is NOT included in the composition of Corexit 9500.	

Attachment 2: EPA Dispersant Product Table – provides effectiveness and toxicity**.**

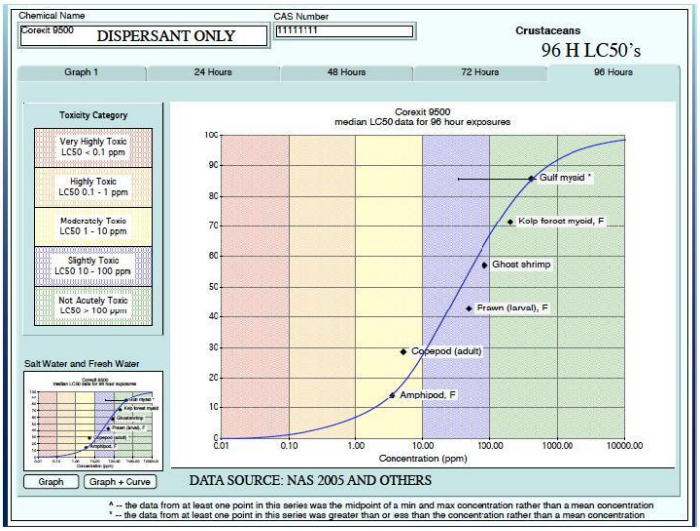
Product (1:10 Product-to-No. 2 Fuel Oil ratio)	Toxicity (LC50 values in ppm)		Effectiveness (%)		
	Menidia (96-hr)	Mysidopsis (48-hr)	Prudhoe Bay Crude Oil	South Louisiana Crude Oil	Average of Crude Oils
BIODISPERS	5.95	2.66	51.00	63.00	57.00
COREXIT® EC9500A	2.61	3.40	45.30	54.70	50.00
COREXIT® EC9527A	4.49	6.60	37.40	63.40	50.40
DISPERSIT SPC 1000™	7.90	8.20	40.00	100.00	73.00
FINASOL OSR 52	5.40	2.37	32.50	71.60	52.10
JD-109	3.84	3.51	26.00	91.00	58.50
JD-2000™	3.59	2.19	60.40	77.80	69.10
MARE CLEAN 200	42.00	9.84	63.97	84.14	74.06
NEOS AB3000	57.00	25.00	19.70	89.80	54.80
NOKOMIS 3-AA	7.03	5.56	63.20	65.70	64.50
NOKOMIS 3-F4	100	58.40	62.20	64.90	63.55
SAF-RON GOLD	9.25	3.04	84.80	53.80	69.30
SEA BRAT #4	23.00	18.00	53.55	60.65	57.10
SEACARE ECOSPERSE 52 (see FINASOL® OSR 52)	5.40	2.37	32.50	71.60	52.10
SEACARE E.P.A. (see DISPERSIT SPC 1000™)	7.90	8.20	40.00	100.00	73.00
SF-GOLD DISPERSANT (see SAF-RON GOLD)	9.25	3.04	84.80	53.80	69.30
ZI-400	8.35	1.77	50.10	89.80	69.90
ZI-400 OIL SPILL DISPERSANT (see ZI-400)	8.35	1.77	50.10	89.80	69.90

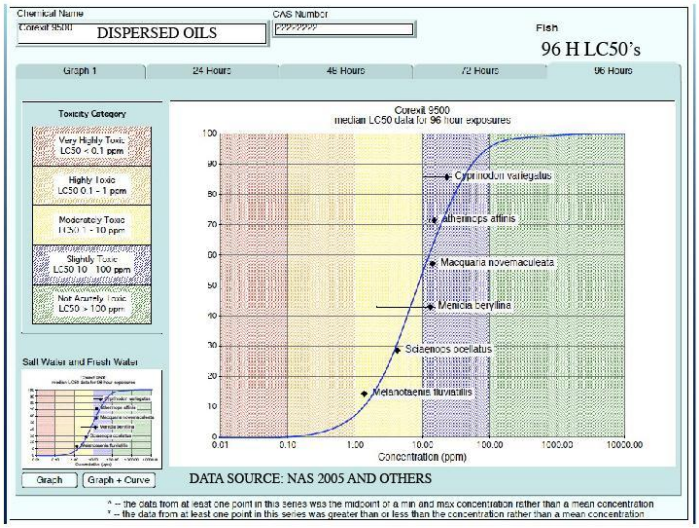
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Attachment 3.

Summary of 96-hour toxicity testing results as lethal concentration for 50% of test organisms, for a variety of crustaceans for Corexit 9500. The top figure shows dispersant only, the bottom figure shows dispersed oil. Note that dispersed oil causes more toxicity at lower concentrations than dispersant alone.

Comment [S11]: The bottom plane includes several fishes such as red drum and Australina rainbowfish (fresh water) but there is no identification of life stages





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Attachment 4. FDA Memo

Attachment 5.

TITLE 40 - CHAPTER I - ENVIRONMENTAL PROTECTION AGENCY
SUBCHAPTER J - SUPERFUND, EMERGENCY PLANNING, AND COMMUNITY RIGHT - TO - KNOW PROGRAMS
PART 300.910 - NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN -USE OF DISPERSANTS AND OTHER CHEMICALS

300.910 - Authorization of use. (a) RRTs and Area Committees shall address, as part of their planning activities, the desirability of using appropriate dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents listed on the NCP Product Schedule, and the desirability of using appropriate burning agents. RCPs and ACPs shall, as appropriate, include applicable preauthorization plans and address the specific contexts in which such products should and should not be used. In meeting the provisions of this paragraph, preauthorization plans may address factors such as the potential sources and types of oil that might be spilled, the existence and location of environmentally sensitive resources that might be impacted by spilled oil, available product and storage locations, available equipment and adequately trained operators, and the available means to monitor product application and effectiveness. The RRT representatives from EPA and the states with jurisdiction over the waters of the area to which a preauthorization plan applies and the DOC and DOI natural resource trustees shall review and either approve, disapprove, or approve with modification the preauthorization plans developed by Area Committees, as appropriate. Approved preauthorization plans shall be included in the appropriate RCPs and ACPs. If the RRT representatives from EPA and the states with jurisdiction over the waters of the area to which a preauthorization plan applies and the DOC and DOI natural resource trustees approve in advance the use of certain products under specified circumstances as described in the preauthorization plan, the OSC may authorize the use of the products without obtaining the specific concurrences described in paragraphs (b) and (c) of this section.

(b) For spill situations that are not addressed by the preauthorization plans developed pursuant to paragraph (a) of this section, the OSC, with the concurrence of the EPA representative to the RRT and, as appropriate, the concurrence of the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, and in consultation with the DOC and DOI natural resource trustees, when practicable, may authorize the use of dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents on the oil discharge, provided that the products are listed on the NCP Product Schedule.

(c) The OSC, with the concurrence of the EPA representative to the RRT and, as appropriate, the concurrence of the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, and in consultation with the DOC and DOI natural resource trustees, when practicable, may authorize the use of burning agents on a case-by-case basis.

(d) The OSC may authorize the use of any dispersant, surface washing agent, surface collecting agent, other chemical agent, burning agent, bioremediation agent, or miscellaneous oil spill control agent, including products not listed on the NCP Product Schedule, without obtaining the concurrence of the EPA representative to the RRT and, as appropriate, the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, when, in the judgment of the OSC, the use of the product is necessary to prevent or substantially reduce a hazard to human life. Whenever the OSC authorizes the use of a product pursuant to this paragraph, the OSC is to inform the EPA RRT representative and, as appropriate, the RRT representatives from the affected states and, when practicable, the DOC/DOI natural resources trustees of the use of a product, including products not on the Schedule, as soon as possible. Once the threat to human life has subsided, the continued use of a product shall be in accordance with paragraphs (a), (b), and (c) of this section.

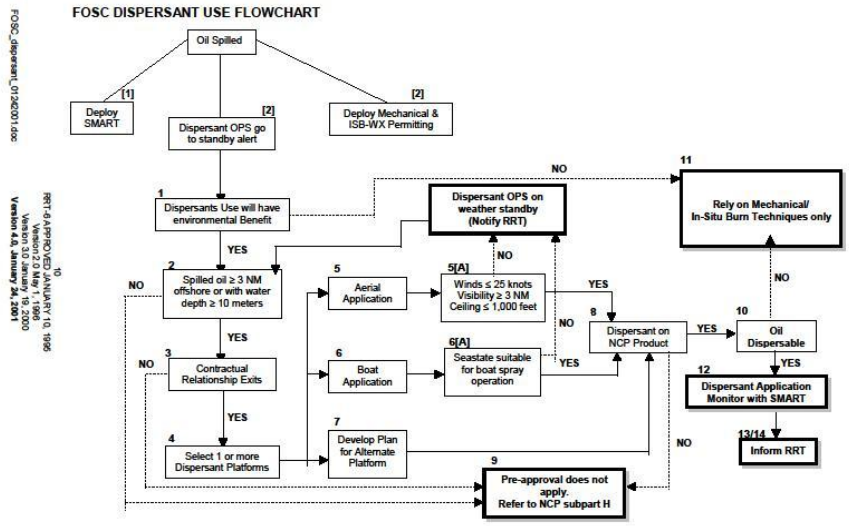
(e) Sinking agents shall not be authorized for application to oil discharges.

(f) When developing preauthorization plans, RRTs may require the performance of supplementary toxicity and effectiveness testing of products, in addition to the test methods specified in 300.915 and described in Appendix C to part 300, due to existing site-specific or area-specific concerns.

Document ID: 0.7.19.1173.1

DRAFT 1.1

Attachment 5. RRT 6 Decision Process Flowchart for Dispersant Use



Document ID: 0.7.19.1173.1

DRAFT 1.1

Attachment 6.

Place holder for Deepwater Directives.

Chemical Name

Corexit 9500 DISPERSANT ONLY

CAS Number

11111111

Crustaceans

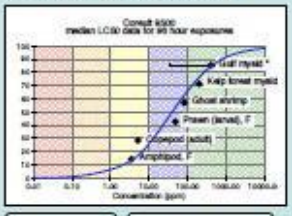
96 H LC50's

Graph 1 | 24 Hours | 48 Hours | 72 Hours | 96 Hours

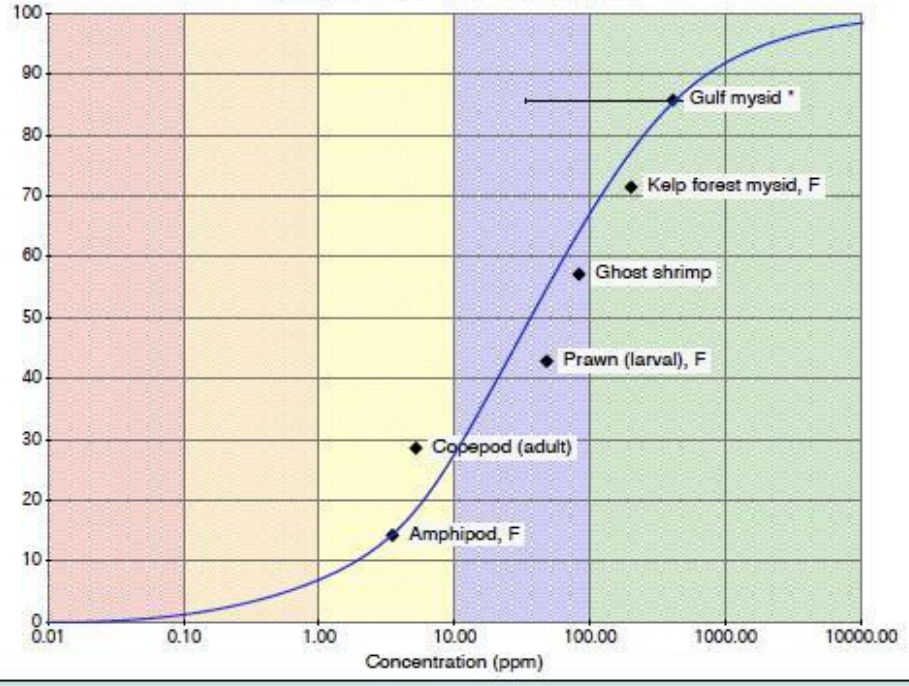
Toxicity Category

- Very Highly Toxic LC50 < 0.1 ppm
- Highly Toxic LC50 0.1 - 1 ppm
- Moderately Toxic LC50 1 - 10 ppm
- Slightly Toxic LC50 10 - 100 ppm
- Not Acutely Toxic LC50 > 100 ppm

Salt Water and Fresh Water



Graph | Graph + Curve



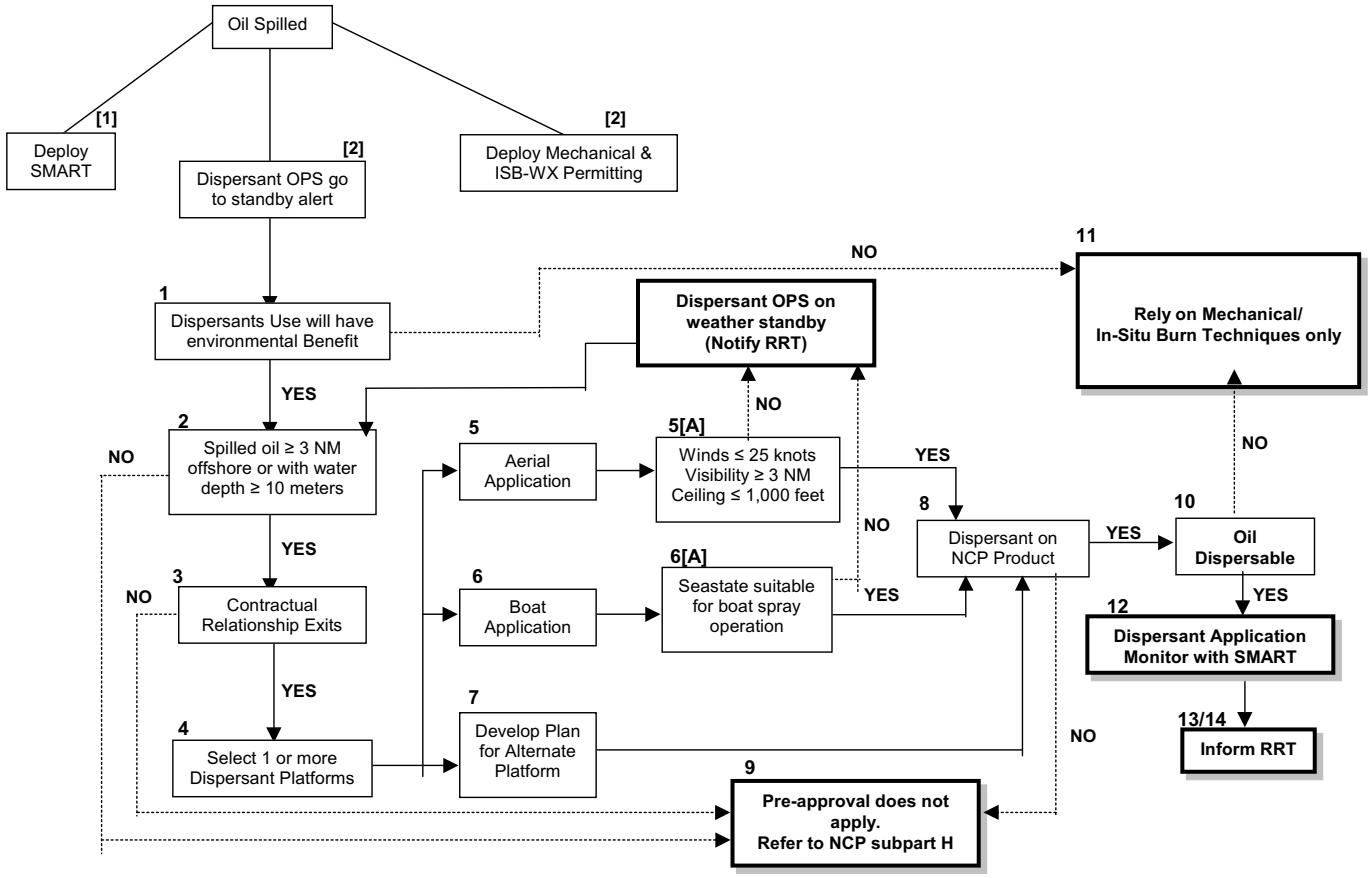
DATA SOURCE: NAS 2005 AND OTHERS

^ -- the data from at least one point in this series was the midpoint of a min and max concentration rather than a mean concentration

* -- the data from at least one point in this series was greater than or less than the concentration rather than a mean concentration

Image not available for this document, ID: 0.7.19.1173.1.2

FOSC DISPERSANT USE FLOWCHART



Document ID: 0.7.19.1173.1.3

Received(Date): Sun, 04 Jul 2010 21:25:34 -0400
From: "Dave.Westerholm" <Dave.Westerholm@noaa.gov>
Subject: Re: Dispersant summary for Principals
To: Steve Murawski <Steve.Murawski@noaa.gov>
Cc: William Conner <William.Conner@noaa.gov>,Robert Haddad <Robert.Haddad@noaa.gov>,Shelby Walker <Shelby.Walker@noaa.gov>,Charlie Henry <Charlie.Henry@noaa.gov>, Ed Levine <Ed.Levine@noaa.gov>,Doug Helton <Doug.Helton@noaa.gov>, Alan Mearns <Alan.Mearns@noaa.gov>,Mark W Miller <Mark.W.Miller@noaa.gov>, John Oliver <John.Oliver@noaa.gov>,John Rapp <John.Rapp@noaa.gov>, Dave Westerholm <Dave.Westerholm@noaa.gov>

Steve,
Thanks for the fast turnaround and I appreciate your overarching comment and careful read and that is why I put the comment in about "for or against". I also agree that the time is now to keep up the research. I have drafted similar comments (which I am sending to Bill) on the regrets section but they are a much simpler. Given some of the misinformation on all fronts, I think one of our biggest challenges will be to frame decision-making objectively on scientific information. In bad situations it is often a decision between which combination of alternatives will have the minimal impact. Beyond the unknowns of dispersing oil, being able to figure how much you will be able to collect or burn and then determining what remains and the fate and effect of that oil on the shoreline (environmental and economic) and surface (lately it has thinking of impacts to turtles, dolphins, whale sharks and rays) is probably equal to our challenge of determining the dispersed oil unknowns. Nevertheless each day the FOSC has to decide what to do with whatever information is available and my biggest regret is that we don't have better information in this regard. There will always be unknowns but our lack of research funding over the years has certainly not helped us. That said, I still think we NOAA more that anyone else is in the best position to assess what information is available and provide recommendations while we continue to work with others in assessing the unknowns.
v/r
Dave

Steve Murawski wrote:

> Dave,
>
> Thanks for sharing this document. I am attaching my comments and edits in a track changes mode. Overall I think we are being a bit too sanguine about the use of these products. It is clear that there has been little relevant testing at depth and offshore, - the work on *Menidia* (a fresh water and estuarine species) for example is likely not relevant to the much more sensitive marine fish (oceanic) actually encountering the dispersant and oil mix. One can see this in the graph in attachment 3 which actually includes red drum (a Gulf species) and which seems to be more sensitive than silversides. So too, the sensitivity of eggs and larvae needs to be accounted for as does the potential for phototoxicity.
>
> The part about ecological risk assessment is very important. So too is the work on first order calculations on the extent and concentration of oil and dispersants. Until we understand this it will be difficult to understand the potential magnitude of dispersant impacts or even better bound the unknowns in this issue.

-Steve

p.s. happy 4th!

Dave.Westerholm wrote:

> To all:
> Attached is the draft document for your review.
> As explained earlier, we understand that some of you will not be able to provide input because of previous commitments today. However if you have time to review, please provide edits to Bill Conner tonight (we are shooting for 8pm). He will incorporate these comments into a draft product for leadership and final review tomorrow (will be sent out sometime early tomorrow morning), which will give us time to make any changes before Dr. Lubchenco's meeting on Tuesday/Wednesday. Remember, in your review that we are trying to provide a framework for the Principals to understand the dispersant decision-making process being careful in this document not to advocate "for or against" their use.
> One area that did not get much attention in the draft was "other alternatives" that may have not be thought of. If anyone has thoughts we can incorporate those and add attachments if appropriate. Also in terms of knowledge gaps and future areas of study, we might also mention that while better studied we don't know all the ecological impacts of other technologies, so this adds additional challenges in weighing this alternative as part of the response.
> Remember this is a work in progress and Thank you for doing this on the Holiday Weekend!
> v/r
> Dave
>
> John Rapp,
> Please send the following note to DWH leadership.
> "The draft dispersant document is being circulated and reviewed by the broader team discussed on Friday. If anyone wants to see the working interim product today, please let me, Bill Conner or Dave Westerholm know and we can forward this initial draft. Otherwise Bill Conner will incorporate changes into this draft product and distribute for leadership tomorrow morning."

Received(Date): Mon, 05 Jul 2010 20:38:39 -0400
From: Guy Noll <Guy.Noll@noaa.gov>
Subject: Re: [Fwd: DWH Data Cheat Sheet]
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Cc: Amrit Mehra <Amrit.Mehra@noaa.gov>
Attachment

Thanks for kicking off, Shelby,
Shall we first agree that the "initial" is 30 April, the "one month" date is 31 May, the "two month" date is 30 June, and the "final" or "current" is 05 July, or do we need to stay within the 30 day of spill start for a month? If we have agreed upon periods, the data will likely match up better/be easier to speak to.
Guy

On Mon, 05 Jul 2010 20:15:35 -0400, Shelby Walker <Shelby.Walker@noaa.gov> wrote:

> Hi Jen et al,
> In response to Amrit's request, I went ahead and filled in some
> information on the Brooks McCall and Weatherbird (pretty much pulled
> straight from the press release) and added >what I know about the
> current vessel deployments (would recommend that OMAO confirm-I've
> copied them here).
> I didn't see any traffic on this and didn't want to duplicate efforts,
> but I'm happy to help put together any of the other data as needed.
> Thanks,
> Shelby
>
> -------- Original Message -------- >Subject: >DWH Data Cheat Sheet
> Date: >Mon, 05 Jul 2010 19:10:19 -0400
> From: >Amrit Mehra <Amrit.Mehra@noaa.gov>
> To: >_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin Kenney
> <Justin.kenney@noaa.gov>
> CC: >Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher Vaccaro
> <Christopher.Vaccaro@noaa.gov>, Arron Layns <Arron.Layns@noaa.gov>,
> Margaret Spring ><Margaret.Spring@noaa.gov>

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> Please let me know who can start compiling this data and send to me.
> Format and length of document not as important as getting all the data.
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> Thanks!
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> Amrit
>
>
> --Amrit Mehra
> Special Assistant to the Administrator
> National Oceanic and Atmospheric Administration
> Direct: B6 Privacy | B7(B6 Privacy
>
>
>

--

Captain Guy Noll, NOAA Corps

NOAA Office of Marine & Aviation Operations

US Department of Commerce

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I didn't see any traffic on this and didn't want to duplicate efforts, but I'm happy to help put together any of the other data as needed.
Thanks,
Shelby

-------- Original Message --------

Subject: DWH Data Cheat Sheet
Date: Mon, 05 Jul 2010 19:10:19 -0400
From: Amrit Mehra <Amrit.Mehra@noaa.gov>
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin Kenney <Justin.kenney@noaa.gov>
CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns <Arron.Layns@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>

Dear DWH Staff and Justin,

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- % of U.S. wetlands in LA (40%?)
- % of fisheries dependent on Gulf marshes/habitats (70-80%?)
- Value of Gulf of Mexico commercial and recreational fisheries

Please let me know who can start compiling this data and send to me. Format and length of document not as important as getting all the data.

Thanks!

Document ID: 0.7.19.996

Amrit

--
Amrit Mehra
Special Assistant to the Administrator
National Oceanic and Atmospheric Administration
Direct: B6 Privacy B6 Privacy B7(c) personal information

--

Captain Guy Noll, NOAA Corps

NOAA Office of Marine & Aviation Operations

US Department of Commerce

Received(Date): Mon, 05 Jul 2010 20:45:54 -0400
From: Joe Inslee <Joe.Inslee@noaa.gov>
Subject: Re: [Fwd: DWH Data Cheat Sheet]
To: Guy Noll <Guy.Noll@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Amrit Mehra <Amrit.Mehra@noaa.gov>

Evening,
The spill occurred the night of April 20th. I am working on adding a bit of the response data to what Shelby sent around. I will send around what I have shortly. My thoughts are
1 month - May 21
2 month - June 21
current -June 5'th

Thoughts?

-Joe

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> Subject: DWH Data Cheat Sheet
> Date: Mon, 05 Jul 2010 19:10:19 -0400
> From: Amrit Mehra <Amrit.Mehra@noaa.gov>
> To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin
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> NOAA Office of Marine & Aviation Operations
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> US Department of Commerce
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--
Joe Inslee
Policy/Outreach Assistant
Assessment and Restoration Division
NOAA Office of Response and Restoration
1305 East-West Highway SSMC 4, Rm. 10219
Silver Spring, MD 20910 Office B6 Privacy ext. 202
B7(c) B6 Privacy
Fax B6 Privacy

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From: Joe Inslee <Joe.Inslee@noaa.gov>
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To: Guy Noll <Guy.Noll@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Amrit Mehra <Amrit.Mehra@noaa.gov>
cheat sheet 7.5.10.doc

Hi all,

First - I meant to say July 5th as the current date in my last email

Attached is a draft that has some more response information filled out. The highlighted (yellow) areas are questions that are pretty well filled out.

- Joe

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>>
>> Amrit

>>
>>
>> -- Amrit Mehra
>> Special Assistant to the Administrator
>> National Oceanic and Atmospheric Administration
>> Direct: [redacted] | Mobile: [redacted]
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>> --
>>
>> Captain Guy Noll, NOAA Corps
>> NOAA Office of Marine & Aviation Operations
>>
>> US Department of Commerce
>>
>

--
Joe Inslee
Policy/Outreach Assistant
Assessment and Restoration Division
NOAA Office of Response and Restoration
1305 East-West Highway SSMC 4, Rm. 10219
Silver Spring, MD 20910 Office [redacted] ext. 202
Cell [redacted]
Fax [redacted]

- Fishery closures
    - Latest % of GOM closed
    - Max/min % (since the first closure)
- Total # of SCAT teams: initially + currently

Currently we have 5-6 teams every day in Houma and up to 10 teams daily out of Mobile Command. Scat has been going on every day for several weeks in Florida, but managed out of the Mobile command. Usually 2-3 teams in Florida (included in the count of 10 teams). The numbers of teams fluctuates a bit depending on weather and staff rotations, but safe to say that approximately 15 teams every day.

The teams are staffed with NOAA, NOAA contractors (e.g., RPI) and NOAA partners (e.g Cal OSPR)

Each team has at least one State, Federal, and RP representative. Generally there is an archaeologist too.

- Flow rate: timeline for different estimates + estimates themselves

Since day one, the Administration s deployments of resources and tactics in response to the BP oil spill have been based on a worst-case, catastrophic scenario.

- Initial estimate was 5,000 bbls a day

-Initial FRTG on May 27th. The independent analysis of the Flow Rate Technical Group has determined that the overall best initial estimate for the lower and upper boundaries of flow rates of oil is in the range of 12,000 and 19,000 barrels per day.

-June 15th - between 35,000 and 60,000 barrels per day

- Wildlife figures
    - Turtles: total dead, total found alive & number (Xn) above normal/average
    - Birds: total dead, total found alive & number (Xn) above normal/average
    - Marine mammals: total dead, total found alive & number (Xn) above normal/average
- Latest total # of barrels & gallons spilled

- O Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling

On March 24, 1989 the oil tanker *Exxon Valdez* ran aground in Prince William Sound Alaska, resulting in eleven million gallons of oil spilled. *I (Joe) don't know the exact time (number of hours) of the release, I will continue to look into this.*

The spill affected over 9,000 miles of shoreline, which had immense impacts on natural resources, local industries and communities, subsistence livelihoods, and tourism.

- o Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth

Ixtoc
The largest oil spill in North America occurred in the Gulf of Mexico. The 200- foot-deep exploratory well, Ixtoc I, blew out on June 3, 1979, in the Bay of Campeche, Mexico, releasing 10,000 - 30, 000 barrels (0.4 - 1.2 million gallons) per day for nine months. Nearly 500 dispersant air sorties were flown in Mexico. Manual cleanup in Texas was aided by storms. Though the blowout preventer (BOP, valve designed to seal off a wellhead) failed, injection of metal and concrete balls into the well slowed the release. By the time the well was brought under control in March 1980 by drilling two relief wells to relieve pressure, an estimated 113 million to over 300 million gallons of oil had spilled (10 times the amount of oil spilled by the Exxon Valdez). Oil travelled 800 miles to the north, oiling more than 150 miles of shoreline in Texas and unknown miles of shoreline in Mexico.

- NOAA personnel
  - Total # regularly in Gulf states (by State)
  - Total # on travel orders in Gulf states (by State)
- Date of seafood protocols announcement: Tuesday, June 29
- Amount of boom deployed

Current 2,957,930 ft

- Amount of oil recovered (progression)
  - Initially (date?)

Date of incident: night of April 20th, on April 23rd *Oily water recovered: 7,600 gallons*

- After 1 month

- By May 21st more than 8.9 million gallons of an oil-water mix have been recovered.

- After 2 months

- By June 21st, Oily water recovered: nearly 23.9 million gallons

- Latest figure

- By July 5, Oily water recovered: nearly 28.3 million gallons

.

Amount of aerial and subsea dispersant deployed (progression)

- Initially (date?)

- Date of incident: night of April 20th, on April 23rd *Dispersant used: 1,900 gallons*

- After 1 month

- By May 21st - Approximately 670,000 gallons of total dispersant had been deployed—600,000 on the surface and 70,000 subsea.

- After 2 months

- By June 21st - Surface dispersant used: more than 959,000 gallons
Subsea dispersant used: more than 468,000 gallons
Total dispersant used: more than 1,427,000 gallons

- Latest figure

- By July 5th, Surface dispersant used: more than 1.06 million gallons
Subsea dispersant used: more than 634,000 gallons
Total dispersant used: more than 1.69 million gallons

- Results of Brooks McCall data
  - Confirms the existence of a previously discovered cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead.

- TPH concentrations at these depths are in concentrations of about 1-2 ppm. Between that depth and the surface mix layer, which is defined as 450 feet below the surface, concentrations fell to levels that were not readily discernable from background levels.
- Cloud is most concentrated near the source of the leak and decreases with distance from the wellhead.
- Beyond six miles from the wellhead, TPH concentrations drop to ND levels.
- DO levels remained above immediate levels of concern

- Results of Weatherbird
  - Hydrocarbons (HCs) found in surface samples taken at the Slick 1 source, 40 nautical miles northeast from the well head, were consistent with the BP oil spill source;
  - HCs found in samples from Station 07—45* nautical miles northeast from the well head—at the surface, at 50 meters and at 400 meters are petroleum-derived but in concentrations too low to confirm the source;
  - HCs found in samples taken from Station 01, 142 nautical miles southeast of the well head, at 100 meters and 300 meters were not consistent with the BP oil spill source.
  -
- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what they are doing
  - R/V Nancy Foster-Loop Current cruise; underway
  - R/V Delaware II-pelagic fish long-line survey; underway
  - R/V Oregon II-shrimp and groundfish survey; underway
  - R/V Gordon Gunter-marine mammal survey; underway
  - R/V Pisces-alongside Pascagoula (next scheduled cruise is reef fish survey)
  - R/V Thomas Jefferson-alongside Key West (next cruise is non-DWH hydrographic survey)

· Probability of oil hitting more shoreline (long-term projections)

Considering these factors, the NOAA model indicates:

The coastlines with the highest probability for impact (81 to 100 percent) extend from the Mississippi River Delta to the western panhandle of Florida where there has been and will likely continue to be oil impacts.

Along U.S. Gulf of Mexico shorelines, the oil is more likely to move east than west, with much of the coast of Texas showing a relatively low probability of oiling (ranging from less than one percent in southern Texas to up to 40 percent near the Louisiana border).

Much of the west coast of Florida has a low probability (20 percent down to less than one percent) of oiling, but the Florida Keys, Miami and Fort Lauderdale areas have a greater probability (61 to 80 percent) due to the potential influence of the Loop Current. Any oil reaching this area would have spent considerable time degrading and dispersing and would be in the form of scattered tar balls and not a large surface slick of oil.

There is a low probability of shoreline impacts from eastern central Florida up the Eastern Seaboard (20 percent diminishing to less than one percent). Potential impacts become increasingly unlikely north of North Carolina as the Gulf Stream moves away from the continental U.S. at Cape Hatteras. If oil does reach these areas, it will be in the form of tar balls or highly weathered oil.

- Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)
- Other factoids
    - % of U.S. wetlands in LA (40%?)

Louisiana contains the largest area of coastal wetlands in North America. Approximately 2.95 million acres of marsh and swamp in Louisiana support nearly one-third of the shrimp and oysters harvested within the United States (excluding AK and HI).

    - % of fisheries dependent on Gulf marshes/habitats (70-80%?)
    - Value of Gulf of Mexico commercial and recreational fisheries

Received(Date): Mon, 05 Jul 2010 21:22:17 -0400
From: Guy Noll <Guy.Noll@noaa.gov>
Subject: Re: [Fwd: DWH Data Cheat Sheet]
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

You're making me get two! Just send to DWH.Staff, and I'll get it.
Nice work.
Shall we include the links to the incident information (http://www.incidentnews.gov/incident/8220, note it has an ongoing list of incidents) and the historical GOM spills (http://response.restoration.noaa.gov/book_shelf/1890_HistoricalSpillsGulfofMexico.pdf)
Exxon Valdez is: http://www.incidentnews.gov/incident/6683, initial response by Alyeska at: http://www.incidentnews.gov/entry/515612
Guy

Joe Inslee wrote:
> Hi all,
>
> First - I meant to say July 5th as the current date in my last email
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> Attached is a draft that has some more response information filled
> out. The highlighted (yellow) areas are questions that are pretty well
> filled out.
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>>> <Shelby.Walker@noaa.gov> wrote:
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>>> information on the Brooks McCall and Weatherbird (pretty much
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>>> about the current vessel deployments (would recommend that OMAO
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>>> efforts, but I'm happy to help put together any of the other data
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>>> Thanks,
>>> Shelby
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>>> Subject: DWH Data Cheat Sheet
>>> Date: Mon, 05 Jul 2010 19:10:19 -0400
>>> From: Amrit Mehra <Amrit.Mehra@noaa.gov>
>>> To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin
>>> Kenney <Justin.kenney@noaa.gov>
>>> CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher
>>> Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns
>>> <Arron.Layns@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>
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>>> Dear DWH Staff and Justin,
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>>> In preparation for Dr. Lubchenco's interview with Andrea
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>>> Direct: [redacted] | Mobile: [redacted]
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>>> Captain Guy Noll, NOAA Corps NOAA Office of Marine & Aviation
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>>> US Department of Commerce
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Received(Date): Mon, 05 Jul 2010 22:19:35 -0400
From: John Rapp <John.Rapp@noaa.gov>
Subject: Re: [Fwd: DWH Data Cheat Sheet]
To: Joe Inslee <Joe.Inslee@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
gulffisheriesbrief.docx
cheat_sheet_070510.docx
Closures by date.docx
DWHBPOilSpillFisheryClosureMap_070410.pdf

I've added to Joe's information which was seemingly added to Shelby's (cheat_sheet_070510.docx). I've also attached some background information should Dr. Lubchenco need more material.

Who's sending this forward?

John

Joe Inslee wrote:
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>

Deepwater Horizon MC252: Fishery Info
June 27, 2010

General Overview

- Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.
    - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
    - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)

- Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).

- State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

Key Species / Seasonality

- Shrimp: Shrimp landings were the largest in the nation in 2008, representing 73% of the national total (LA, $130.6 million; TX, $157.2 million; AL, $38.4 million; W. FL, $23.3 million; MS, $17.1 million). Major species include white shrimp, pink shrimp and brown shrimp. Shrimp fisheries generally occur year-round; peaking in the summer, except for waters off Texas, which are closed May 15 until (usually) July 15. The principal shrimp fishery operates west of the Mississippi River.

- Oysters: The Gulf region also leads the nation in oyster production, producing about 67% of the national total in 2008 (LA, $38.8 million; TX, $8.83 million; MS, $6.87 million; W. FL, $5.47 million; AL, $243,414). There are substantial oyster reefs in LA, MS, and AL waters. Oyster fisheries generally occur year-round. Oysters are harvested from relatively shallow water through a combination of naturally occurring oysters and oysters cultivated by individual leaseholders on oyster "grounds" managed by individual entities.

- Crabs: Blue crabs are the most economically valuable crab species in the region. LA fishermen are responsible for about 26% of blue crab landings nationwide. Total landings were valued at $39.6 million in 2008 (LA, $32 million; W. FL, $3.3 million; TX, $2.3 million; AL, $1.5 million; MS, $447,000). Peak harvesting season is April-May. Blue crabs are harvested also from relatively shallow water, and are particularly found inshore in back bays and tidal tributaries.

Document ID: 0.7.19.1396.1

Deepwater Horizon MC252: Fishery Info
June 27, 2010

- Finfish: The Gulf of Mexico also supports valuable finfish fisheries, which target menhaden, reef fish, coastal migratory pelagic (open ocean fish), and highly migratory species.

    - Commercial menhaden fisheries operate in the north-central Gulf primarily during the summer and fall, and earned $64.4 million in revenue in 2008 (LA, $45.8 million; MS, $18.5 million). Menhaden are relatively low value fish caught in large volumes to be processed for fish oil and fish meal.
    - Commercial reef fish fisheries (snappers, groupers, amberjack, and triggerfish) operate throughout the Gulf primarily during spring through fall, and earned over $37.5 million in revenue in 2008 (W. FL, $28.4 million; TX, $4.9 million; LA, $3.5 million; AL, $750,000; MS, confidential). The nearshore and offshore waters of the north-central, northwestern and western Gulf of Mexico are areas of high red snapper abundance; the majority of the recreational red snapper fishery is conducted in the north-central Gulf of Mexico. The northeastern and eastern Gulf of Mexico are areas of high grouper abundance, both shallow water grouper on the continental shelf and deep water grouper along the outer shelf edge; the western Gulf of Mexico contains large numbers of deep water grouper in deep shelf edge reefs.
    - Coastal migratory pelagic fisheries (king mackerel, cobia, dolphin fish) generally operate in inshore and nearshore waters throughout the Gulf of Mexico year-round, although king mackerel is subject to seasonal-area quotas. The prime recreational season is spring through fall. Commercial fisheries earned $5.0 million in revenue in 2008 (W. FL, $2.9 million; LA, $1.4 million; AL, $703,000; MS and TX, confidential)
    - Several species of tuna and billfish occur throughout the Gulf of Mexico and fisheries for these species occur year-round. A primary fishery for yellowfin tuna occurs in the northern Gulf of Mexico and this fishery is most active spring through fall. Commercial fisheries earned $7.6 million in revenue in 2008 (LA, $5.3 million; W. FL, $2.2 million; other states minor)

Federal Closure Background/Reopening Protocol

- The fishery closure is the initial primary tool to ensure that fish affected by oil do not reach markets, thus protecting public confidence in product harvested from unaffected areas of the Gulf region. The closure area is complemented by seafood testing from around the closure area and ultimately in the marketplace.

- The closure approach has generally been supported by industry leaders as an important component of the effort to ensure public confidence. However, in certain lightly affected parts of the closure area to the west of the Mississippi delta and on the far southeastern boundary off W. Florida, some local fishermen are anxious for reopening.

- On May 2, 2010, NOAA Fisheries Service closed 6,817 square miles (3%) of Gulf of Mexico federal waters to fishing activity as a precautionary measure to ensure public safety and assure consumer confidence of Gulf of Mexico seafood in response to the Deepwater Horizon MC252 incident. Since then, we have adjusted the closed area boundaries 18 times. As of June 27, 2010, the current closed area boundaries cover about 78,597 square miles (33% of federal waters in the Gulf of Mexico) between western Terrebonne, LA, and Panama City, FL (map attached).

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Deepwater Horizon MC252: Fishery Info
June 27, 2010

- Waters are closed to harvesting when oil is present, has been present, or is projected to be present in the area in the near term (within a 72-hour time frame), based on the assumption that finfish, shrimp, and other shellfish species in the affected area could ingest the oil or otherwise be contaminated or adulterated by the oil. The U.S. Food and Drug Administration regulates the presence of oil contamination as an "adulterant" (an unwanted chemical substance) in seafood. Seafood that is adulterated may not be sold.

- Commercial and recreational fishing is prohibited within the closed area (transit and possession is allowed). NOAA Fisheries Service considered authorizing catch-and-release fishing within the closed area, but determined we need to better understand the potential risks of the spill and response activities, as well as law enforcement issues, before determining whether such action is appropriate.

- Each day, NOAA Fisheries Service reviews data provided by NOAA's Office of Response and Restoration on the present location and projected path of the oil and adjusts the closed area boundaries as needed. Updated information on the closed area boundary is communicated to the public at about 12 p.m. Eastern Time each day via fishery bulletins, the Southeast Regional Office website and Twitter and text alerts. Any changes to the closed area boundary take effect at 6 p.m. Eastern Time that same day to provide fishermen adequate time to respond to the notification and plan the next day's activities. The coordinates of the closed area are broadcast on NOAA Weather Radio and recorded at 1-800-627-NOAA (1-800-627-6622).

- NOAA Fisheries Service is collecting and evaluating seafood samples to assess the extent of any potential contamination or adulteration both within the current closed area and throughout the Gulf.

- NOAA Fisheries Service must follow a protocol developed in consultation with the FDA to re-open federal waters that have been closed as a result of oil from the Deepwater Horizon incident.
  - We have reopened (and will continue to reopen) portions of the closed area that were closed based on trajectories if data indicate oil never reached those areas.
  - We will reopen portions of the closed area from which oil has receded if we conclude through sampling and testing that the seafood within those areas is not contaminated or adulterated.
    - Priority sampling locations include those areas in the Gulf which were initially closed because of observed surface oil but which have not been impacted by oil for some time.
    - We are currently conducting sampling off western Terrebonne, LA, and W. FL, and will respond to the findings of testing conducted on those samples as quickly as possible.

Document ID: 0.7.19.1396.1

Deepwater Horizon MC252: Fishery Info
June 27, 2010

State Closure Background/Reopening Protocol

- States are responsible for closure of state waters.

- The Louisiana Department of Wildlife and Fisheries (LDWF) also has implemented precautionary closures of recreational and commercial fishing based on the best information the Secretary of the Department receives from field biologists, staff and trajectory models from NOAA.

- As of June 27, 2010, current closures encompass 2,125 square miles of state waters from Dulac to Plaquemines, as well as a portion of Chandeleur Sound (27% of LA saltwater fisheries) (maps attached and online at http://www.wlf.louisiana.gov/oilspill/, http://www.wlf.louisiana.gov/pdfs/news/ALL-CLOSURES.jpg, and http://www.wlf.louisiana.gov/pdfs/news/ALL-CLOSURES-2.jpg).

- Once reports of oil are received, LDWF initiates a field survey and immediate seafood testing in the suspected areas. Closures are subsequently made with the intent to be as safe as possible, while not closing any fishing areas unnecessarily. As test results come back clearing the area, affected waters are then reopened.

- LDWF is working closely with the Louisiana Department of Health and Hospitals and the Louisiana Department of Environmental Quality to conduct coast-wide sampling of fish, crabs and shrimp, to ensure all seafood harvested from the Gulf is a safe, quality product. To date, all seafood sampled from Louisiana has tested negative for hydrocarbons.

Coordination among State and Federal Management Authorities on Closures and Reopening

- Last week in New Orleans the FDA and NOAA held a meeting with the Gulf State fishery and health agency Directors, and other State leadership. They discussed re-opening protocols and confirmed that both FDA and NMFS are working under common seafood testing and analysis protocols. Through the meeting state representatives concurred that it was appropriate for all authorities to work under the same testing and analysis protocols.

- The discussion also covered laboratory preparedness and FDA estimates for supporting testing of state seafood samples. NMFS laboratories are online and processing federal waters samples and some samples from State waters and FDA and the states are coming online.

- Concurrently, there is concern about the ability to process adequate volumes of samples to support timely reopening when circumstances permit. There is ongoing work to expand lab processing capacity under current chemical testing methodologies and in also exploring alternative testing methodologies that might allow a reduced analysis period.

- FDA agreed to lead a state / federal work group that will continue that process and sustain regular communication around seafood testing procedures. Any new testing procedures would be validated

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against the NOAA testing protocols currently in use. The meeting was well received and a productive step forward for the seafood safety and surveillance program.

Economic Impacts

- Fishery closures are extremely difficult for local fishermen who are already experiencing economic hardship. They have affected recreational fishermen, the for-hire (charter and headboat) industry and associated shore-side businesses, and the commercial fishing industry, including fishermen, dealers, processors and ancillary industries.

- Fishermen throughout the Gulf are fearful for their livelihoods. On June 23, 2010, a charter captain in Orange Beach, Alabama, and participant in the BP Vessel of Opportunity program, committed suicide.

- In addition to being prohibited from traditional fishing grounds, some fishermen and dealers are reporting difficulty selling reef fish (grouper and snapper) harvested from open waters due to contamination concerns. Several Highly Migratory Species (tuna and billfish) tournaments have already been postponed in LA, MS, AL, and FL.
- Shore-side processors, wholesalers and retailers have also expressed concern that the BP Vessel of Opportunity program is actually discouraging many fishermen from fishing even though they may still have access to open harvest waters.

- No estimates of the effects of the oil spill on recreational and commercial fishing have been issued as of this time because the leak has not been stopped and the extent of impacts is still being monitored. However, NOAA is working to understand the economic impacts of the closure on affected fishermen:
  - NOAA Fisheries Service is monitoring commercial landings relative to recent average landings.
  - NOAA Fisheries Service worked collaboratively with the Gulf States Marine Fisheries Commission and state fishery agencies to improve the precision and timeliness of recreational data collection to help us better understand how the closure is impacting recreational fishing effort. Specifically, we increased the number of charter captain interviews conducted by the weekly For-Hire Survey (FHS) in each state and are working together to collect, enter and process those data on a faster track so we can produce fishing effort statistics at weekly, rather than bimonthly, intervals. Additionally, we have added questions to the FHS survey to obtain information on fishing trip cancellations directly related to the oil spill. This information will be used to help determine whether recreational fishermen are harvesting species, such as red snapper and greater amberjack, as quickly as projected or whether extended seasons may be warranted.
  - NOAA National Ocean Service's Office of Response and Restoration is evaluating the value of lost public use associated with recreational activities such as fishing, beach visitation, and other public uses as part of the natural resource damage assessment being carried out for the Deepwater Horizon oil spill. At this time, it is unknown when the natural resource damage assessment will be completed.

Document ID: 0.7.19.1396.1

- Also, NOAA is working with partner universities to develop monitoring plans that will help us understand the future impacts of the Deepwater Horizon spill on natural mortality, spawning potential and reproduction, carrying capacity and the Gulf of Mexico ecosystem.

Disaster Assistance

- On May 24, 2010, the Secretary of Commerce declared a fishery resource disaster in the Gulf of Mexico for the states of Mississippi, Louisiana, and Alabama. On June 2, 2010 the Secretary also declared a fishery resource disaster for Florida.

- These determinations pave the way for Congress to appropriate funds to address the economic effects of the Deepwater Horizon spill on affected fishermen and communities. Funds are generally distributed through qualifying states in accordance with plan submitted and approved by those states. An interstate authority, the Gulf States Marine Fisheries Commission, helped states to apply for and utilize federal disaster funding in the aftermath of hurricane Katrina.
- This is an unusual case for federal fishery disaster assistance due to the BP claims process, the new $20 billion escrow announcement and the expectation that BP is directly responsible for these damages.

- The administration has requested $15 million of supplemental funding as a backstop to address this disaster, as well as $5 million of economic development assistance through the Economic Development Administration. In addition, the administration is requesting unemployment coverage for this disaster, and the Small Business Administration is offering economic injury disaster loans, which can help fishermen and other affected businesses.
- NOAA Fisheries continues to work closely with affected fishing related businesses and state authorities to identify gaps in the current assistance process and to identify ways in which federal fishery disaster assistance can be of greatest utility to impacted fishermen and fishing related businesses.

Document ID: 0.7.19.1396.1

Fishery closures

- Latest % of GOM closed – 34%; last modified on July 4, 2010
- Max/min % (since the first closure) – 37%/2.8% on June 2, 2010 and May 2, 2010, respectively.
- Background materials attached: historical closing % and closure map.

· Total # of SCAT teams: initially + currently

Currently we have 5-6 teams every day in Houma and up to 10 teams daily out of Mobile Command. Scat has been going on every day for several weeks in Florida, but managed out of the Mobile command. Usually 2-3 teams in Florida (included in the count of 10 teams). The numbers of teams fluctuates a bit depending on weather and staff rotations, but safe to say that approximately 15 teams every day.

The teams are staffed with NOAA, NOAA contractors (e.g., RPI) and NOAA partners (e.g Cal OSPR)

Each team has at least one State, Federal, and RP representative. Generally there is an archaeologist too.

· Flow rate: timeline for different estimates + estimates themselves

Since day one, the Administration s deployments of resources and tactics in response to the BP oil spill have been based on a worst-case, catastrophic scenario.

- Initial estimate was 5,000 bbls a day

-Initial FRTG on May 27th. The independent analysis of the Flow Rate Technical Group has determined that the overall best initial estimate for the lower and upper boundaries of flow rates of oil is in the range of 12,000 and 19,000 barrels per day.

-June 15th - between 35,000 and 60,000 barrels per day

· Wildlife figures

- Turtles: total dead, total found alive & number (Xn) above normal/average
  - 601 turtles stranded
    - 444 found dead
    - 146 live turtles currently in rehabilitation
    - 7 live turtles that died in rehabilitation
    - 4 turtles released
  - The number of sea turtle strandings is much higher than the number documented in recent years. For example, 234 turtles were stranded between June 1 and July 4. The historical number of strandings during this period is between 5 and 25 from Louisiana to the Florida panhandle.

- Birds: total dead, total found alive & number (Xn) above normal/average
    - 2327 birds collected
        - 1387 found dead
        - 940 alive and in rehabilitation
        - 410 birds released

- Marine mammals: total dead, total found alive & number (Xn) above normal/average
    - 58 marine mammals stranded (57 dolphins and 1 sperm whale)
        - 52 dolphins and 1 whale found dead
        - 1 dolphin currently alive and in rehabilitation
        - 3 dolphins that died in rehabilitation
    - 1 dolphin released
    - The number of marine strandings is higher than the number documented in recent years. For example, 27 dolphins were stranded between June 1 and July 4. The historical number of strandings during this period is between 0 and 11 from Louisiana to the Florida panhandle.

· Latest total # of barrels & gallons spilled

- Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
    - On March 24, 1989 the oil tanker *Exxon Valdez* ran aground in Prince William Sound Alaska, resulting in eleven million gallons of oil spilled. *I (Joe) don't know the exact time (number of hours) of the release, I will continue to look into this.*
    - The spill affected over 9,000 miles of shoreline, which had immense impacts on natural resources, local industries and communities, subsistence livelihoods, and tourism.
- Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth
    - Ixtoc - The largest oil spill in North America occurred in the Gulf of Mexico. The 200-foot-deep exploratory well, Ixtoc I, blew out on June 3, 1979, in the Bay of Campeche, Mexico, releasing 10,000 - 30, 000 barrels (0.4 - 1.2 million gallons) per day for nine months. Nearly 500 dispersant air sorties were flown in Mexico. Manual cleanup in Texas was aided by storms. Though the blowout preventer (BOP, valve designed to seal off a wellhead) failed, injection of metal and concrete balls into the well slowed the release. By the time the well was brought under control in March 1980 by drilling two relief wells to relieve pressure, an estimated 113 million to over 300 million gallons of oil had spilled (10 times the amount of oil spilled by the Exxon Valdez). Oil travelled 800 miles to the north, oiling more than 150 miles of shoreline in Texas and unknown miles of shoreline in Mexico.

· NOAA personnel

    - Total # regularly in Gulf states (by State)

    - Total # on travel orders in Gulf states (by State)

· Date of seafood protocols announcement: Tuesday, June 29

· Amount of boom deployed

Current 2,957,930 ft

· Amount of oil recovered (progression)

- Initially (date?)
  - Date of incident: night of April 20th, on April 23rd *Oily water recovered: 7,600 gallons*
- After 1 month
  - By May 21st more than 8.9 million gallons of an oil-water mix have been recovered.
- After 2 months
  - By June 21st, Oily water recovered: nearly 23.9 million gallons
- Latest figure
  - By July 5, Oily water recovered: nearly 28.3 million gallons

Amount of aerial and subsea dispersant deployed (progression)

- Initially (date?)
  - Date of incident: night of April 20th, on April 23rd *Dispersant used: 1,900 gallons*
- After 1 month
  - By May 21st - Approximately 670,000 gallons of total dispersant had been deployed—600,000 on the surface and 70,000 subsea.
- After 2 months
  - By June 21st - Surface dispersant used: more than 959,000 gallons
  - Subsea dispersant used: more than 468,000 gallons
  - Total dispersant used: more than 1,427,000 gallons
- Latest figure
  - By July 5th, Surface dispersant used: more than 1.06 million gallons
    Subsea dispersant used: more than 634,000 gallons
    Total dispersant used: more than 1.69 million gallons

- Results of Brooks McCall data
  - Confirms the existence of a previously discovered cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead.
  - TPH concentrations at these depths are in concentrations of about 1-2 ppm. Between that depth and the surface mix layer, which is defined as 450 feet below the surface, concentrations fell to levels that were not readily discernable from background levels.
  - Cloud is most concentrated near the source of the leak and decreases with distance from the wellhead.
  - Beyond six miles from the wellhead, TPH concentrations drop to ND levels.
  - DO levels remained above immediate levels of concern
- Results of Weatherbird
  - Hydrocarbons (HCs) found in surface samples taken at the Slick 1 source, 40 nautical miles northeast from the well head, were consistent with the BP oil spill source;
  - HCs found in samples from Station 07—45* nautical miles northeast from the well head—at the surface, at 50 meters and at 400 meters are petroleum-derived but in concentrations too low to confirm the source;

    - HCs found in samples taken from Station 01, 142 nautical miles southeast of the well head, at 100 meters and 300 meters were not consistent with the BP oil spill source.
- Very short descriptions (few words) on which NOAA vessels are out in Gulf and what they are doing
    - R/V Nancy Foster-Loop Current cruise; underway
    - R/V Delaware II-pelagic fish long-line survey; underway
    - R/V Oregon II-shrimp and groundfish survey; underway
    - R/V Gordon Gunter-marine mammal survey; underway
    - R/V Pisces-alongside Pascagoula (next scheduled cruise is reef fish survey)
    - R/V Thomas Jefferson-alongside Key West (next cruise is non-DWH hydrographic survey)

· Probability of oil hitting more shoreline (long-term projections)

Considering these factors, the NOAA model indicates:

The coastlines with the highest probability for impact (81 to 100 percent) extend from the Mississippi River Delta to the western panhandle of Florida where there has been and will likely continue to be oil impacts.

Along U.S. Gulf of Mexico shorelines, the oil is more likely to move east than west, with much of the coast of Texas showing a relatively low probability of oiling (ranging from less than one percent in southern Texas to up to 40 percent near the Louisiana border).

Much of the west coast of Florida has a low probability (20 percent down to less than one percent) of oiling, but the Florida Keys, Miami and Fort Lauderdale areas have a greater probability (61 to 80 percent) due to the potential influence of the Loop Current. Any oil reaching this area would have spent considerable time degrading and dispersing and would be in the form of scattered tar balls and not a large surface slick of oil.

There is a low probability of shoreline impacts from eastern central Florida up the Eastern Seaboard (20 percent diminishing to less than one percent). Potential impacts become increasingly unlikely north of North Carolina as the Gulf Stream moves away from the continental U.S. at Cape Hatteras. If oil does reach these areas, it will be in the form of tar balls or highly weathered oil.

· Hurricane forecasts and related factoids (3-7 hurricanes? 14 tropical storms?)

· Other factoids

- % of U.S. wetlands in LA - Currently, Louisiana has 30% of the total coastal marsh and accounts for 90% of the coastal marsh loss in the lower 48 states (http://www.americaswetland.com).

- % of fisheries dependent on Gulf marshes/habitats (70-80%?)
    - Approximately 75% of the Nation's commercial fish and shellfish depend on estuaries at some stage in their life cycle. Estuaries themselves depend on their wetlands to maintain water quality and provide the basis for food chains that culminate in human

consumption of seafood. Many estuarine-dependent species have even closer ties to wetlands in that they feed, take refuge, or reproduce in the wetlands themselves. Without wetlands, these fish and shellfish cannot survive.

- Value of Gulf of Mexico commercial and recreational fisheries:
    - Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.
        - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
        - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)
    - Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).
    - State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

The current closure area was last modified on July 4, 2010, and measures 81,181 square miles and covers about 34% of the Gulf of Mexico EEZ. The smallest closure was on May 2, 2010, and covered 2.8% while the largest closure area was 37% of the Gulf of Mexico EEZ on June 2, 2010.

Background – Closure area history

May 2, 2010 – 2.8%

May 7, 2010 – 4.5%

May 11, 2010 – 6.6%

May 12, 2010 – 7.3%

May 14, 2010 – 8%

May 17, 2010 – 10%

May 18, 2010 – 19%

May 21, 2010 – 19.8%

May 25, 2010 – 22.4%

May 28, 2010 – 25%

May 31, 2010 – 26%

June 1, 2010 – 31%

June 2, 2010 – 37%

June 4, 2010 – 32%

June 5, 2010 – 33%

June 7, 2010 – 32%

June 16, 2010 – 33%

June 21, 2010 – 36%

June 23, 2010 – 33%

June 28, 2010 – 33%

July 4, 2010 – 34%

Image not available for this document, ID: 0.7.19.1396.4

Received(Date): Mon, 05 Jul 2010 22:48:47 -0400
From: Guy Noll <Guy.Noll@noaa.gov>
Subject: Re: [Fwd: DWH Data Cheat Sheet]
To: John Rapp <John.Rapp@noaa.gov>

Everything is there except for the NOAA employee #s; only 8:46 in Aspen. Better to have some now, finish tomorrow?

John Rapp wrote:
> I've added to Joe's information which was seemingly added to Shelby's
> (cheat_sheet_070510.docx). I've also attached some background
> information should Dr. Lubchenco need more material.
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> Who's sending this forward?
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> John
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>> Hi all,
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>> out. The highlighted (yellow) areas are questions that are pretty
>> well filled out.
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>>> The spill occurred the night of April 20th. I am working on adding a
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>>>> On Mon, 05 Jul 2010 20:15:35 -0400, Shelby Walker
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>>>> In response to Amrit's request, I went ahead and filled in some
>>>> information on the Brooks McCall and Weatherbird (pretty much
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>>>> about the current vessel deployments (would recommend that OMAO
>>>> confirm-I've copied them here).
>>>> I didn't see any traffic on this and didn't want to duplicate
>>>> efforts, but I'm happy to help put together any of the other data
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>>>> Thanks,
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>>>> Subject: DWH Data Cheat Sheet
>>>> Date: Mon, 05 Jul 2010 19:10:19 -0400
>>>> From: Amrit Mehra <Amrit.Mehra@noaa.gov>
>>>> To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin
>>>> Kenney <Justin.kenney@noaa.gov>
>>>> CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher
>>>> Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns
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>>>> tomorrow in Aspen, she would like to have a one-page cheat sheet
>>>> put together with key data. *Can someone begin pulling the
>>>> following info together from the various sources out there?* Some
>>>> of the data can be found in the latest NIC briefing update
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>>>> update
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>>>> Please let me know who can start compiling this data and
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>>>>
>>>> Thanks!
>>>>
>>>> Amrit
>>>>
>>>> -- Amrit Mehra
>>>> Special Assistant to the Administrator
>>>> National Oceanic and Atmospheric Administration
>>>> Direct: 202.482.5921 | Mobile: 202.510.5561
>>>>
>>>>
>>>>
>>>> --
>>>>
>>>> Captain Guy Noll, NOAA Corps NOAA Office of Marine & Aviation
>>>> Operations
>>>>
>>>> US Department of Commerce
>>>>
>>>
>>

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From: Shelby Walker <Shelby.Walker@noaa.gov>
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To: John Rapp <John.Rapp@noaa.gov>
Cc: Joe Inslee <Joe.Inslee@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
cheat_sheet_070510_v1.docx
Shelby_Walker.vcf

Hi all,
Looks like we still have a couple of holes. Perhaps we can regroup
before the call in the morning and see if we can figure those out (I
know the number of personnel deployed is usually part of the ICC report).
Shelby

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>>>> o % of fisheries dependent on Gulf marshes/habitats (70-80%?)
>>>>
>>>> o Value of Gulf of Mexico commercial and recreational fisheries
>>>>
>>>> Please let me know who can start compiling this data and
>>>> send to
>>>> me. Format and length of document not as important as getting all
>>>> the data.
>>>>
>>>> Thanks!
>>>>
>>>> Amrit
>>>>
>>>> -- Amrit Mehra
>>>> Special Assistant to the Administrator
>>>> National Oceanic and Atmospheric Administration
>>>> Direct: B6 Privacy | Mobile: B6 Privacy
>>>>
>>>>
>>>>
>>>> --
>>>>
>>>> Captain Guy Noll, NOAA Corps NOAA Office of Marine & Aviation
>>>> Operations
>>>>
>>>> US Department of Commerce
>>>>
>>>
>>

- Fishery closures
  - Latest % of GOM closed – 34%; last modified on July 4, 2010
  - Max/min % (since the first closure) –
    - 37% / 2.8% on June 2, 2010 and May 2, 2010, respectively.
  - Background materials attached: historical closing % and closure map.

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  - Currently we have 5-6 teams every day in Houma and up to 10 teams daily out of Mobile Command. Scat has been going on every day for several weeks in Florida, but managed out of the Mobile command. Usually 2-3 teams in Florida (included in the count of 10 teams). The numbers of teams fluctuates a bit depending on weather and staff rotations, but safe to say that approximately 15 teams every day.
  - The teams are staffed with NOAA, NOAA contractors (e.g., RPI) and NOAA partners (e.g Cal OSPR)
  - Each team has at least one State, Federal, and RP representative. Generally there is an archaeologist too.

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  - June 15th - between 35,000 and 60,000 barrels per day

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  - Turtles: total dead, total found alive & number (Xn) above normal/average
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      - 444 found dead
      - 146 live turtles currently in rehabilitation
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  - The number of sea turtle strandings is much higher than the number documented in recent years. For example, 234 turtles were stranded between June 1 and July 4. The historical number of strandings during this period is between 5 and 25 from Louisiana to the Florida panhandle.
  - Birds: total dead, total found alive & number (Xn) above normal/average
    - 2327 birds collected

        - 1387 found dead
        - 940 alive and in rehabilitation
        - 410 birds released

    - Marine mammals: total dead, total found alive & number (Xn) above normal/average
        - 58 marine mammals stranded (57 dolphins and 1 sperm whale)
        - 52 dolphins and 1 whale found dead
        - 1 dolphin currently alive and in rehabilitation
        - 3 dolphins that died in rehabilitation
        - 1 dolphin released
    - The number of marine strandings is higher than the number documented in recent years. For example, 27 dolphins were stranded between June 1 and July 4. The historical number of strandings during this period is between 0 and 11 from Louisiana to the Florida panhandle.

- Latest total # of barrels & gallons spilled

- Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
    - On March 24, 1989 the oil tanker *Exxon Valdez* ran aground in Prince William Sound Alaska, resulting in eleven million gallons of oil spilled. *I (Joe) don't know the exact time (number of hours) of the release, I will continue to look into this.*
    - The spill affected over 9,000 miles of shoreline, which had immense impacts on natural resources, local industries and communities, subsistence livelihoods, and tourism.
- Total amount (barrels/gallons) oil spilled in Ixtoc + length of time oil was spilling + depth
    - Ixtoc - The largest oil spill in North America occurred in the Gulf of Mexico. The 200- foot-deep exploratory well, Ixtoc I, blew out on June 3, 1979, in the Bay of Campeche, Mexico, releasing 10,000 - 30, 000 barrels (0.4 - 1.2 million gallons) per day for nine months.
    - Nearly 500 dispersant air sorties were flown in Mexico. Manual cleanup in Texas was aided by storms. Though the blowout preventer (BOP, valve designed to seal off a wellhead) failed, injection of metal and concrete balls into the well slowed the release.
    - By the time the well was brought under control in March 1980 by drilling two relief wells to relieve pressure, an estimated 113 million to over 300 million gallons of oil had spilled (10 times the amount of oil spilled by the Exxon Valdez). Oil travelled 800 miles to the north, oiling more than 150 miles of shoreline in Texas and unknown miles of shoreline in Mexico.

- NOAA personnel

    - Total # regularly in Gulf states (by State)

    - Total # on travel orders in Gulf states (by State)

- Date of seafood protocols announcement: Tuesday, June 29

- Amount of boom deployed
  - Current 2,957,930 ft

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  - Initially
    - Date of incident: night of April 20th, on April 23rd *Oily water recovered: 7,600 gallons*
  - After 1 month
    - By May 21st more than 8.9 million gallons of an oil-water mix have been recovered
  - After 2 months
    - By June 21st, Oily water recovered: nearly 23.9 million gallons
  - Latest figure
    - By July 5, Oily water recovered: nearly 28.3 million gallons

- Amount of aerial and subsea dispersant deployed (progression)
  - Initially
    - Date of incident: night of April 20th, on April 23rd *Dispersant used: 1,900 gallons*
  - After 1 month
    - By May 21st - Approximately 670,000 gallons of total dispersant had been deployed—600,000 on the surface and 70,000 subsea
  - After 2 months
    - By June 21st - Surface dispersant used: more than 959,000 gallons
    - Subsea dispersant used: more than 468,000 gallons
    - Total dispersant used: more than 1,427,000 gallons
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    - By July 5th, Surface dispersant used: more than 1.06 million gallons
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  - Confirms the existence of a previously discovered cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead.
  - TPH concentrations at these depths are in concentrations of about 1-2 ppm. Between that depth and the surface mix layer, which is defined as 450 feet below the surface, concentrations fell to levels that were not readily discernable from background levels.
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- Beyond six miles from the wellhead, TPH concentrations drop to ND levels.
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  - Hydrocarbons (HCs) found in surface samples taken at the Slick 1 source, 40 nautical miles northeast from the well head, were consistent with the BP oil spill source;
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- Very short descriptions on which NOAA vessels are out in Gulf and what they are doing
  - R/V Nancy Foster-Loop Current cruise; underway
  - R/V Delaware II-pelagic fish long-line survey; underway
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  - The NOAA model indicates:
    - The coastlines with the highest probability for impact (81 to 100 percent) extend from the Mississippi River Delta to the western panhandle of Florida where there has been and will likely continue to be oil impacts.
    - Along U.S. Gulf of Mexico shorelines, the oil is more likely to move east than west, with much of the coast of Texas showing a relatively low probability of oiling (ranging from less than one percent in southern Texas to up to 40 percent near the Louisiana border).
    - Much of the west coast of Florida has a low probability (20 percent down to less than one percent) of oiling, but the Florida Keys, Miami and Fort Lauderdale areas have a greater probability (61 to 80 percent) due to the potential influence of the Loop Current. Any oil reaching this area would have spent considerable time degrading and dispersing and would be in the form of scattered tar balls and not a large surface slick of oil.
    - There is a low probability of shoreline impacts from eastern central Florida up the Eastern Seaboard (20 percent diminishing to less than one percent). Potential impacts become increasingly unlikely north of North Carolina as the Gulf Stream moves away from the continental U.S. at Cape Hatteras. If oil does reach these areas, it will be in the form of tar balls or highly weathered oil.

- Hurricane forecasts and related factoids
  - A 70% probability of:
    - 14-23 Named storms (top winds 39mph or higher)
    - 8-14 Hurricanes (top winds 74mph or higher), of which
    - 3-7 could be Major Hurricanes(Category 3, 4, or 5; winds of at least 111mph)
  - Outlook ranges exceed the seasonal average of 11 named storms, six hurricanes and two major hurricanes.

- % of U.S. wetlands in LA –
  - Currently, Louisiana has 30% of the total coastal marsh and accounts for 90% of the coastal marsh loss in the lower 48 states (http://www.americaswetland.com).

- % of fisheries dependent on Gulf marshes/habitats (70-80%?)-
  - Approximately 75% of the Nation's commercial fish and shellfish depend on estuaries at some stage in their life cycle. Estuaries themselves depend on their wetlands to maintain water quality and provide the basis for food chains that culminate in human consumption of seafood. Many estuarine-dependent species have even closer ties to wetlands in that they feed, take refuge, or reproduce in the wetlands themselves. Without wetlands, these fish and shellfish cannot survive.

- Value of Gulf of Mexico commercial and recreational fisheries:
  - Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.
    - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
    - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)
  - Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).
  - State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

Shelby Walker, PhD

Strategic Planning Team Lead

Office of Oceanic and Atmospheric Research, NOAA
Office of Policy, Planning and Evaluation

Rm 11319
1315 East West Highway
Silver Spring, MD 20910

301-734-1049 (Work)
301-938-7328 (Cell)

shelby.walker@noaa.gov (Internet)

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Shelby Walker, PhD

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Middle:
Prefix:
Suffix:

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Office of Policy, Planning and Evaluation

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P.O. Address: Rm 11319
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Street: 1315 East West Highway
Locality: Silver Spring
Region: MD
Postal Code: 20910
Country:

Electronic Mail Address (Internet)
shelby.walker@noaa.gov

Title
Strategic Planning Team Lead

Telephone Number (Work)
301-734-1049

Telephone Number (Cell)
301-938-7328

Version
2.1

Received(Date): Tue, 06 Jul 2010 09:24:49 -0400
From: Shelby Walker <Shelby.Walker@noaa.gov>
Subject: Re: Fwd: [Fwd: DWH Data Cheat Sheet]
To: Amrit Mehra <Amrit.Mehra@noaa.gov>
Cc: "'john.rapp@noaa.gov'" <John.Rapp@noaa.gov>,"'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,"'Arron.Layns@noaa.gov'" <Arron.Layns@noaa.gov>,"'justin.kenney@noaa.gov'" <Justin.kenney@noaa.gov>
cheat_sheet_070510_v1.docx
Shelby_Walker.vcf

Hi Amrit,
Attached is the updated cheat sheet.
Regards,
Shelby

Amrit Mehra wrote:

> Thank you so much, John, and the everyone else who helped on this! We will get this to her tonight and update tomorrow as needed.
>
> Amrit Mehra
> Special Assistant to NOAA Administrator
> B6 Privacy
>
> Sent from Blackberry device. Please excuse spelling and grammatical errors.

From: John Rapp <john.rapp@noaa.gov>
To: Amrit Mehra <Amrit.Mehra@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Sent: Mon Jul 05 22:52:56 2010
Subject: Fwd: [Fwd: DWH Data Cheat Sheet]

Amrit,

Everything you requested, except for the number of personnel deployed, is in the attached. We'll work on getting that to you, but figured there's still time tonight for Dr. Lubchenco to review.

John

Begin forwarded message:

> **From:** John Rapp <John.Rapp@noaa.gov>
> **Date:** July 5, 2010 10:19:35 PM EDT
> **To:** Joe Inslee <Joe.Inslee@noaa.gov>
> **Cc:** _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
> **Subject: Re: [Fwd: DWH Data Cheat Sheet]**

I've added to Joe's information which was seemingly added to Shelby's (cheat_sheet_070510.docx). I've also attached some background information should Dr. Lubchenco need more material.

Who's sending this forward?

John

Joe Inslee wrote:

> Hi all,
>
> First - I meant to say July 5th as the current date in my last email
>
> Attached is a draft that has some more response information filled out. The highlighted (yellow) areas are questions that are pretty well filled out.
>
> - Joe
>
> Joe Inslee wrote:
>
> > Evening,
> >
> > The spill occurred the night of April 20th. I am working on adding a bit of the response data to what Shelby sent around. I will send around what I have shortly. My thoughts are
> >
> > 1 month - May 21
> >
> > 2 month - June 21
> >
> > current -June 5'th
> >
> > Thoughts?
> >
> > -Joe

Guy Noll wrote:

> Thanks for kicking off, Shelby,
>
> Shall we first agree that the "initial" is 30 April, the "one month" date is 31 May, the "two month" date is 30 June, and the "final" or "current" is 05 July, or do we need to stay within the 30 day of spill start for a month? If we have agreed upon periods, the data will likely match up better/be easier to speak to.
>
> Guy
>
> On Mon, 05 Jul 2010 20:15:35 -0400, Shelby Walker <Shelby.Walker@noaa.gov> wrote:
>
> > Hi Jen et al,
> >
> > In response to Amrit's request, I went ahead and filled in some
> >
> > information on the Brooks McCall and Weatherbird (pretty much
> >
> > pulled straight from the press release) and added what I know

about the current vessel deployments (would recommend that OMAO

confirm-I've copied them here).

I didn't see any traffic on this and didn't want to duplicate

efforts, but I'm happy to help put together any of the other data

as needed.

Thanks,

Shelby

-------- Original Message --------

Subject: DWH Data Cheat Sheet

Date: Mon, 05 Jul 2010 19:10:19 -0400

From: Amrit Mehra <Amrit.Mehra@noaa.gov>

To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>, Justin

Kenney <Justin.kenney@noaa.gov>

CC: Jennifer Austin <Jennifer.Austin@noaa.gov>, Christopher Vaccaro <Christopher.Vaccaro@noaa.gov>, Arron Layns <Arron.Layns@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>

Dear DWH Staff and Justin,

In preparation for Dr. Lubchenco's interview with Andrea Mitchell tomorrow in Aspen, she would like to have a one-page cheat sheet put together with key data. *Can someone begin pulling the following info together from the various sources out there?* Some of the data can be found in the latest NIC briefing update attached here.

Ideally, we'd like something tonight but otherwise, by the update

call tomorrow morning.

· Fishery closures

o Latest % of GOM closed

o Max/min % (since the first closure)

· Total # of SCAT teams: initially + currently

· Flow rate: timeline for different estimates + estimates

themselves

· Wildlife figures

o Turtles: total dead, total found alive & number (Xn) above

normal/average

o Birds: total dead, total found alive & number (Xn) above

Document ID: 0.7.19.678

normal/average

o Marine mammals: total dead, total found alive & number (Xn)

above normal/average

· Latest total # of barrels & gallons spilled

o Total amount (barrels/gallons) oil spilled in Exxon-Valdez +

length of time oil was spilling

o Total amount (barrels/gallons) oil spilled in Ixtoc + length

of time oil was spilling + depth

· NOAA personnel

o Total # regularly in Gulf states (by State)

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- Date of seafood protocols announcement: Tuesday, June 29

- Amount of boom deployed

- Amount of oil recovered (progression)

  - Initially (date?)

  - After 1 month

  - After 2 months

  - Latest figure

- Amount of aerial and subsea dispersant deployed (progression)

  - Initially (date?)

  - After 1 month

  - After 2 months

  - Latest figure

- Results of Brooks McCall data

· Results of Weatherbird

· Very short descriptions (few words) on which NOAA

vessels are out in Gulf and what they are doing

· Probability of oil hitting more shoreline (long-term

projections)

· Hurricane forecasts and related factoids (3-7

hurricanes? 14 tropical storms?)

· Other factoids

o % of U.S. wetlands in LA (40%?)

o % of fisheries dependent on Gulf marshes/habitats (70-80%?)

o Value of Gulf of Mexico commercial and recreational fisheries

Please let me know who can start compiling this data and send to

me. Format and length of document not as important as getting all

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Thanks!

Amrit

-- Amrit Mehra

Special Assistant to the Administrator

National Oceanic and Atmospheric Administration

Direct: B6 Privacy |
Mobile: B6 Privacy

--

Captain Guy Noll, NOAA Corps NOAA Office of Marine & Aviation Operations

US Department of

Commerce

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- Latest total # of barrels & gallons spilled – Unknown-there is currently no government estimate of total release.

- Total amount (barrels/gallons) oil spilled in Exxon-Valdez + length of time oil was spilling
    - On March 24, 1989 the oil tanker *Exxon Valdez* ran aground in Prince William Sound Alaska, resulting in eleven million gallons of oil spilled. The EV was not actually plugged; the damaged tanks reached an equilibrium with the surrounding water and I think oil was transferred to intact tanks.
    - The EV was pretty significantly damaged and it likely took a matter of hours/ less than a day for the oil to equilibrate with inflow of sea water but there were sheens from damaged tanks open to the sea for longer.
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- National Incident Command (NIC)WASHINGTON, DC **0**
- Unified Area Command (UAC)NEW ORLEANS, LA **12**
- Incident Cmd Post (ICP) - LAHOUMA, LA* **38**
- Incident Cmd Post (ICP) - ALMOBILE, AL* **14**
- Incident Cmd Post (ICP) - FLMIAMI, FL **2**
- Branch FL ICPST. PETERSBURG, FL **0**
- Branch FL ICPKEY WEST, FL **2**
- Staging Area (SA) & Fwd Operating Base (FOB)
  - Port Fourchon, LA**1**
  - Slidell, LA **0**
  - Port Sulphur, LA **0**
  - Venice, LA** **5**
  - Biloxi, MS **0**
  - Pascagoula, MS **20**
  - Stennis Airport, MS **0**
  - Dauphin Island, AL **0**
  - Pensacola, FL **0**
  - Orange Beach, AL **2**
  - Panama City, FL **0**
- NOAA Ships and Research Vessels (R/V) **37**
- On Orders to WFOs for DWH ICP SpprtWFO New Orleans, WFO Mobile**7**
- Misc/Various Locations: **6**
- ***Total Deployed NOAA Staff:*** ***146****

- **NOAA Line Office On Orders**
  - NOS **37**
  - NMFS **70**
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- Hurricane forecasts and related factoids
  - A 70% probability of:
    - 14-23 Named storms (top winds 39mph or higher)
    - 8-14 Hurricanes (top winds 74mph or higher), of which
    - 3-7 could be Major Hurricanes(Category 3, 4, or 5; winds of at least 111mph)
  - Outlook ranges exceed the seasonal average of 11 named storms, six hurricanes and two major hurricanes.

- % of U.S. wetlands in LA –
  - Currently, Louisiana has 30% of the total coastal marsh and accounts for 90% of the coastal marsh loss in the lower 48 states (http://www.americaswetland.com).

- % of fisheries dependent on Gulf marshes/habitats (70-80%?)-
  - Approximately 75% of the Nation's commercial fish and shellfish depend on estuaries at some stage in their life cycle. Estuaries themselves depend on their wetlands to maintain water quality and provide the basis for food chains that culminate in human consumption of seafood. Many estuarine-dependent species have even closer ties to wetlands in that they feed, take refuge, or reproduce in the wetlands themselves. Without wetlands, these fish and shellfish cannot survive.

- Value of Gulf of Mexico commercial and recreational fisheries:

  - Commercial and recreational fishing are among the biggest industries in the Gulf of Mexico.

    - In 2008, commercial finfish and shellfish landings totaled 1.27 billion pounds and earned $659 million in dockside revenue (does not include downstream benefits to ice houses, boat mechanics, etc.) (LA, $272.9 million; TX, $176.1 million; W. FL, $122.1 million; AL, $44.3 million; MS, $43.7 million)
    - In 2008, 3.2 million recreational fishermen took 25.4 million fishing trips in the Gulf of Mexico; annual recreational sector sales impacts (includes downstream benefits to bait and tackle shops, etc.) that year are estimated at $12.1 billion (W. FL, $5.7 billion; TX, $3.3 billion; LA, $2.3 billion; AL, $0.5 billion; MS, $0.4 billion)

  - Federal fisheries target primarily shrimp and finfish (red snapper, grouper, mackerel, and highly migratory species like tuna) within the Gulf of Mexico exclusive economic zone (waters extending from state water boundaries to 200 miles offshore).

- State fisheries target shrimp, oysters, crab, and finfish (menhaden, reef fish, sharks) within state waters (0-3 miles off AL, MS and LA, and 0-9 miles off TX and W. FL).

Shelby Walker, PhD

Strategic Planning Team Lead

Office of Oceanic and Atmospheric Research, NOAA
Office of Policy, Planning and Evaluation

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Silver Spring, MD 20910

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Shelby Walker, PhD

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Middle:	
Prefix:	
Suffix:	

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Office of Policy, Planning and Evaluation

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301-938-7328

Version
2.1

Received(Date): Tue, 06 Jul 2010 17:49:49 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Q&A for Dr. Robinson hearing
To: Katie Nichols <Katie.Nichols@noaa.gov>,Brian T Pawlak <Brian.T.Pawlak@noaa.gov>,Chris Rilling <Chris.Rilling@noaa.gov>,"'John.Rapp@noaa.gov'" <John.Rapp@noaa.gov>,Brycen Swart <Brycen.Swart@noaa.gov>,"Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>, Deb Lambert <Deb.Lambert@noaa.gov>
Jessica_Kondel.vcf

Hi--
I'm putting together some Q&As for Dr. Robinson's hearing on dispersants in front of the CJS Cmte next week. I think I have enough info to pull together some basic Q&As on dispersants relative to seafood safety/ monitoring and I have some general Q&As from past hearings on impacts to fisheries, oysters, shrimp, etc. However, I think it would also be good to have a Q&A on why we didn't have an ESA consultation on the use of dispersants in light of the recent attention/ litigation to the in situ burning ops and lack of ESA consultation. Not sure if we have a good answer here but need something for Dr. Robinson to say in case asked. Obviously, this should also be vetted with GC.
If I could get something NLT 10am on Friday that would be great.

Jessica

Jessica Kondel

Legislative Affairs Specialist

NOAA Office of Legislative Affairs

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Version
2.1

Received(Date): Thu, 08 Jul 2010 15:31:05 -0400
From: Rachel Wilhelm <Rachel.Wilhelm@noaa.gov>
Subject: Revised Tar Ball Fact Sheet
To: Oil_DWH <dwh.staff@noaa.gov>, _HDQ Oil Spill <Oil.Spill@noaa.gov>

Thanks to our wonderful team, we have a revised fact sheet that includes a question about dispersants & tar balls. Please replace previous versions of the tar ball fact sheet with this one. Unfortunately due to the rush, this version is not yet 508-compliant. We hope to have that complete early next week.

I will also send this to the JIC for posting.

Thank you,
Rachel

--

_____
Rachel.Wilhelm@noaa.gov
NOAA Public Affairs Specialist
Office: 202.482.3978
Mobile: 202.657.9816

http://www.noaa.gov

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

NOAA Oil Spill Response

Understanding Tar Balls



What are Tar Balls and How Do They Form?

Tar balls, the little, dark-colored pieces of oil that stick to our feet when we go to the beach, are actually remnants of oil spills. When crude oil (or a heavier refined product) floats on the ocean surface, its physical characteristics change.

During the first few hours of a spill, the oil spreads into a thin slick. Winds and waves tear the slick into smaller patches that are scattered over a much wider area. Various physical, chemical, and biological processes change the appearance of the oil. These processes are generally called "weathering."

Initially, the lighter components of the oil evaporate much like a small gasoline spill. In the cases of heavier types of oil, such as crude oil or home heating oil, much of the oil remains behind. At the same time, some crude oils mix with water to form an emulsion that often looks like chocolate pudding.



This emulsion is much thicker and stickier than the original oil. Winds and waves continue to stretch and tear the oil patches into smaller pieces, or tar balls. While some tar balls may be as large as pancakes, most are coin-sized. Tar balls are very persistent in the marine environment and can travel hundreds of miles.

How Long Will Tar Balls Remain Sticky?

Weathering processes eventually create a tar ball that is hard and crusty on the outside and soft and gooey on the inside, not unlike a toasted marshmallow. Turbulence in the water or beach activity from people or animals may break open tar balls, exposing their softer, more fluid centers.

Scientists have not been very successful at creating weathered tar balls in the laboratory and measuring the thickness of the crusty outer layer. Therefore, we don't know how much energy is needed to rupture a tar ball.

We do know that temperature has an important effect on the stickiness of tar balls. As air and water temperatures increase, tar balls become more fluid and, therefore, sticky — similar to an asphalt road warmed by the summer sun.

Another factor influencing stickiness is the amount of particulates and sediments present in the water or on the shoreline, which can adhere to tar balls. The more sand and debris attached to a tar ball, the more difficult it is to break the tar ball open. These factors make it extremely difficult to predict how long a tar ball will remain sticky.

(continued on back)



Document ID: 0.7.19.1177

National Oceanic and Atmospheric Administration
U.S. Department of Commerce

NOAA's Oil Spill Response

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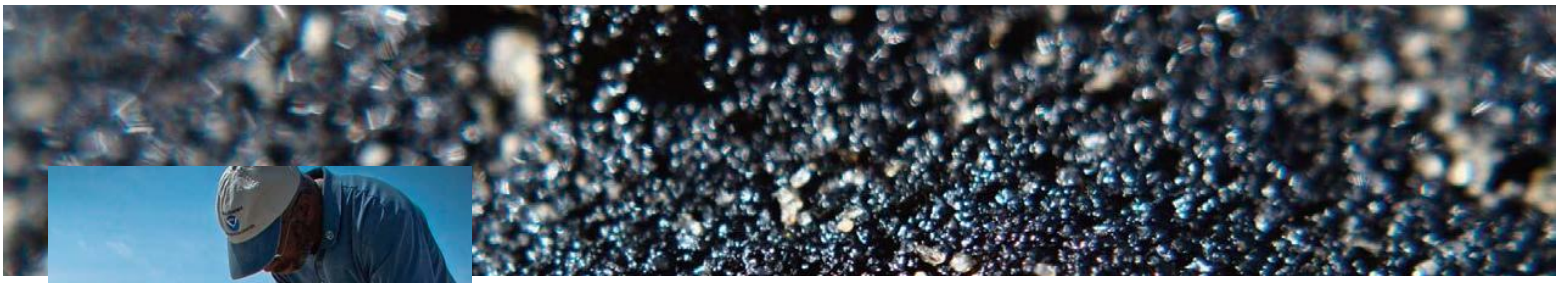
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(continued on back)







Are Tar Balls Hazardous to Your Health?

For most people, an occasional brief contact with a small amount of oil, while not recommended, will do no harm. However, some people are especially sensitive to chemicals, including the hydrocarbons found in crude oil and petroleum products. They may have an allergic reaction or develop rashes even from brief contact with oil. In general, we recommend that contact with oil be avoided.

If contact occurs, wash the area with soap and water, baby oil, or a widely used, safe cleaning compound such as the cleaning paste sold at auto parts stores. Avoid using solvents, gasoline, kerosene, diesel fuel, or similar products on the skin. These products, when applied to skin, present a greater health hazard than the smeared tar ball itself.

Tar Ball Bits and Pieces

Beach Cleanup

There is no magic trick to making tar balls disappear. Once tar balls hit the beaches, they may be picked up by hand or by beach-cleaning machinery. If the impact is severe, the top layer of sand containing the tar balls may be removed and replaced with clean sand.

Are there more tar balls on beaches along the East Coast than on the West Coast?

The number of tar balls found on the beach depends on several factors: tanker traffic, wind patterns, sea currents, whether an oil spill occurred recently, and how often the beach is cleaned.

Obviously, some beaches may have more tar balls than others, but to our knowledge, East Coast beaches are not necessarily more polluted with tar balls than beaches along the West Coast of the United States.

Can Dispersants Cause Tar Balls?

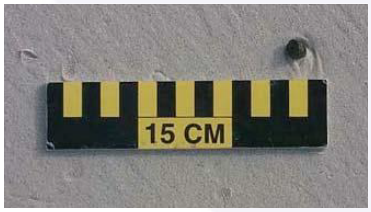
No. Dispersants do the exact opposite- they break oil up into tiny droplets, much smaller than the head of a pin, which do not re-form or re-congeal into a visible mass of oil.

Tar balls are weathered oil that has lost its lighter components. Thus they are denser than fresh oil and closer to the density of seawater. They still float, but in estuarine (less dense) waters like Lakes Pontchartrain and Borgne, they would float very low in the water and be easily entrained by currents, as well as roll under or around booms and barges. They are also widely scattered and may not be noticeable at sea or floating, but may accumulate on shorelines.

Reporting

New tar balls appearing on a beach may indicate an oil spill. If you notice unusual numbers of tar balls on the beaches, call the U. S. Coast Guard any time at 800-424-8802.

For additional information:



http://response.restoration.noaa.gov

http://response.restoration.noaa.gov/adios

NOAA's Office of Response and Restoration Emergency Response Division: 206-526-6317

Learn more about NOAA's response to the BP oil spill at http://response.restoration.noaa.gov/deepwaterhorizon.

To learn more about NOAA, visit http://www.noaa.gov.

Document ID: 0.7.19.1177.1

Received(Date): Fri, 09 Jul 2010 17:21:48 -0400
From: Jessica Kondel <Jessica.Kondel@noaa.gov>
Subject: Re: [Fwd: Subsea Oil and Gas Legislation]
To: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>
Jessica_Kondel.vcf

Nelson's office sent us a draft of this bill (attached). OLIA will
coordinate LO review and comments and have also looped in Glenn.

Jessica Kondel wrote:
> fyi--Senator Nelson plans to offer this as an amendment to the larger
> Senate oil spill bill during mark-up.
>
>
>
> ---
>
> Subject:
> Subsea Oil and Gas Legislation
> From:
> "Gonzalez-Rothi, Sara (Bill Nelson)"
> <Sara_Gonzalez-Rothi@billnelson.senate.gov>
> Date:
> Wed, 07 Jul 2010 12:15:13 -0400
> To:
> Jessica Kondel <Jessica.Kondel@noaa.gov>
>
> To:
> Jessica Kondel <Jessica.Kondel@noaa.gov>
>
>
> Hi Jessica,
>
> I wanted to give you a heads-up that Senator Nelson intends to file a
> bill next week dealing with subsea oil and gas (“plumes” as the media
> likes to call it). The bill would direct NOAA to review its
> technological capabilities and plans for detecting, monitoring, and
> mapping subsea oil and then create a program within the Office of
> Restoration and Response to map subsea hydrocarbons in the future.
> Here is a summary:
>
> *Summary of the bill:*
>
> This legislation directs NOAA to conduct a rapid and comprehensive
> review of their testing methods and current technology for detecting,
> monitoring, and mapping subsea hydrocarbons—both oil and gas, visible
> and dissolved invisible hydrocarbons. This review will be done within
> 45 days.
>
> The review will address:
>
> 1) Dispersants. How should we use them at various depths,
> temperatures, and pressures?
>
> 2) Technology for detecting oil and gas at various depths. Do we have
> the technology to detect oil and gas even in small concentrations?
>
> 3) Fingerprinting. It currently takes sending water samples to a lab

> that takes days to determine if the hydrocarbons match oil from the
> Deepwater Horizon well. Is there technology that could speed this
> process up?
>
> 4) Trajectory. Where are the subsea hydrocarbons in what
> concentrations and where they are going? We need a visual trajectory map.
>
> 5) Effects of subsea hydrocarbons on all levels of the food web. Do
> these subsea hydrocarbons kill animals, impact their growth, impact
> their reproduction, and do the chemicals build up in the tissues of
> fish and mammals such that predators higher on the food web might be
> unsafe for human consumption down the road?
>
> Upon completion, a Subsea Hydrocarbon Monitoring and Assessment
> Program will be established within the Office of Response and
> Restoration based on recommendations from the review. This will be a
> $15 million dollar program funded from the Oil Spill Liability Trust
> Fund.
>
> Thanks,
>
> Sara
>
> Sara Gonzalez-Rothi
>
> Everglades Fellow
>
> Office of Senator Bill Nelson
>
> (202)224-5274 (ph)
>
> (202)228-1632 (fax)
>
> */Connect with Bill:/**//*
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> <http://twitter.com/senbillnelson> youtube
> <http://www.youtube.com/senbillnelson>Mail_4
> <http://billnelson.senate.gov/news/ebriefs.cfm>
>

111TH CONGRESS
2D SESSION

S.ll

To improve the ability of the National Oceanic and Atmospheric Administration to respond to releases of subsea oil and gas, and for other purposes.

IN THE SENATE OF THE UNITED STATES

lllllllll

Mr. NELSON of Florida introduced the following bill; which was read twice and referred to the Committee on lllllllll

---

A BILL

To improve the ability of the National Oceanic and Atmospheric Administration to respond to releases of subsea oil and gas, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Subsea Hydrocarbon Imagery and Planning Act of 2010''.

SEC. 2. IMPROVEMENTS TO NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OIL SPILL RESPONSE.

(a) SUBSEA HYDROCARBON REVIEW.—Not later than 45 days after the date of the enactment of this Act,

Document ID: 0.7.19.1330

111TH CONGRESS
2D SESSION

S. _____

To improve the ability of the National Oceanic and Atmospheric Administration to respond to releases of subsea oil and gas, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. NELSON of Florida introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

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(a) SUBSEA HYDROCARBON REVIEW.—Not later than 45 days after the date of the enactment of this Act,

Document ID: 0.7.19.1330.1

the Under Secretary for Oceans and Atmosphere shall conduct a comprehensive review of the current state of the National Oceanic and Atmospheric Administration and the capacity of the Administration to monitor, map, and track subsea hydrocarbons.

(b) ELEMENTS.—The review conducted under subsection (a) shall include the following:

(1) A review of protocol for application of dispersants that contemplates the variables of temperature, pressure, and depth of the site of release of hydrocarbons.

(2) A review of technological capabilities to detect the presence of subsea hydrocarbons at various concentrations and at various depths within a water column resulting from releases of oil and natural gas after a spill.

(3) A review of technological capabilities for expeditiously identifying the source (known as ''fingerprinting'') of subsea hydrocarbons.

(4) A review of coastal and ocean current modeling as it relates to predicting the trajectory of oil and natural gas.

(5) A review of the effect of subsea hydrocarbons (all concentrations including down to hydrocarbon chains in solution) on all levels of the food

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web, including evaluations of seafood safety, toxicity to individuals, negative impacts to reproduction, bioaccumulation, growth, and such other matters as the Under Secretary considers appropriate.

(6) Development of recommendations on priorities for improving forecasting of movement of subsea hydrocarbons.

(7) Development of recommendations for long-term remote monitoring of subsea hydrocarbons after a spill, including dissolved oxygen impacts.

(8) Development of recommendations for implementation of a Subsea Hydrocarbon Monitoring and Assessment program within the Office of Response and Restoration.

(c) PROGRAM REQUIRED.—Not later than 1 year after the date of the enactment of this Act, the Under Secretary shall establish a hydrocarbon monitoring and assessment program. Such program shall be based on the recommendations developed under the comprehensive review required by subsection (a).

(d) FUNDING.—Not later than 30 days after the date of the enactment of this Act, out of any funds in the Oil Spill Liability Trust Fund established by section 9509 of the Internal Revenue Code of 1986 not otherwise appropriated, the Secretary of the Treasury shall transfer to

Document ID: 0.7.19.1330.1

the Secretary of Commerce to carry out the provisions of this section $15,000,000 to remain available until expended.

Document ID: 0.7.19.1330.1

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NOAA's Office of Legislative Affairs

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Version
2.1

Received(Date): Mon, 26 Jul 2010 12:55:43 -0400
From: MaryLee Haughwout <MaryLee.Haughwout@noaa.gov>
Subject: Re: Fwd: RE: NOAA NRDA follow-up Q
To: Christina.Durham@noaa.gov, Tony Penn <Tony.Penn@noaa.gov>,Joe Inslee <Joe.Inslee@noaa.gov>, Michael Jarvis <Michael.Jarvis@noaa.gov>,John Rapp <John.Rapp@noaa.gov>, Brendan Bray <Brendan.Bray@noaa.gov>
Cc: David Holst <David.Holst@noaa.gov>
Additional Qs_EPW.doc
marylee_haughwout.vcf

Hi All,
Here are a few Q&As related to two of the questions from Lautenberg, the transparency question from Cardin and previously cleared dispersant questions (given it sounds like there will be questions along these lines).

I consider these draft - so if folks have additional thoughts on these please let me know.

Thanks,
MaryLee

Christina.Durham@noaa.gov wrote:

Subject:
RE: NOAA NRDA follow-up Q
From:
"Greenberger, Sarah (Cardin)" <Sarah_Greenberger@cardin.senate.gov>
Date:
Mon, 26 Jul 2010 10:54:51 -0400
To:
'Christine Durham' <Christina.Durham@noaa.gov>
To:
'Christine Durham' <Christina.Durham@noaa.gov>
CC:
"'amanda.hallberg@noaa.gov'" <Amanda.Hallberg@noaa.gov>

Christina, Amanda, sorry for the delay. Here is a list of issues Senator Cardin may cover in the hearing tomorrow. We expect several members on the majority side including Senators Whitehouse, Merkley and Lautenberg. Not sure who will attend on the minority side, but Senator Vitter is a likely candidate.

* Funding for assessment and restoration work. What is the process for getting assessment work into the field? What is being paid for upfront by BP, the Oil Spill Liability Trust Fund, the Trustee agencies?

* Cost of assessing restoring, replacing, acquiring natural resources versus the $75 million limit on damages.

* BP's role in the assessment process and restoration process?

BP Buying of Scientists.

* What is the scope of the assessment work? Will it be ecosystem wide? Will it be long-term? How will assessment be balanced with restoration work? Is there a preference for restoration as a remedy above the others named in NRDA including replacement?

* How are third party researchers and their work incorporated into the NRDA? Is there any peer review of the protocols or the overall study program? Is work done independently of the trustees used in the assessment (e.g. Smithsonian collection)?

* Transparency. Is the nature and scope of work being made available to the public? What are the requirements for public involvement? Can the residents of the Gulf, especially those impacted by the damage and knowledgeable about the ecosystems be included in assessment and restoration work?

* Importance of NRDA work generally and description of NOAA/FWS programs. Number of NRDAs, for what kinds of incidents, how much recovered each year. Employees, budgets, resources available for preparedness, training, equipment. Need for allocated funding from Trust Fund? FWS need for additional damage assessment authority?

-----Original Message-----
From: Christine Durham [mailto:Christina.Durham@noaa.gov]
Sent: Sunday, July 25, 2010 11:12 PM
To: Greenberger, Sarah (Cardin); 'Christina.Durham@noaa.gov'
Cc: 'amanda.hallberg@noaa.gov'
Subject: Re: NOAA NRDA follow-up Q

Sarah,
11:15AM would be perfect. I'll speak to you then.
Thanks!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov' <Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov' <amanda.hallberg@noaa.gov>
Sent: Sun Jul 25 23:04:56 2010
Subject: Re: NOAA NRDA follow-up Q

I can do 11am if that's better. I'll send that list in the morning. I am at 228-6430.
Sent from my Blackberry Wireless Handheld

----- Original Message -----
From: Christine Durham <Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin); 'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov' <amanda.hallberg@noaa.gov>

Sent: Sun Jul 25 22:04:24 2010
Subject: Re: NOAA NRDA follow-up Q

Sarah,
Thanks for your help. I can speak whenever you are free; earlier the better. 1PM works for me. I will not be at my desk tomorrow, so I can call you if that works. Please let me know.
Thanks again!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov' <Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov' <amanda.hallberg@noaa.gov>
Sent: Fri Jul 23 19:30:45 2010
Subject: Re: NOAA NRDA follow-up Q

Thanks Christina. I'll have a list of issues for you tomorrow. We can touch base ahead of your conversation with Tony on Monday. 1pm would work well for me if that's not too late to be helpful. If so, let me know what your time constraints are so we can find a time that works.

Best, Sarah
Sent from my Blackberry Wireless Handheld

----- Original Message -----
From: Christina.Durham@noaa.gov <Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin)
Cc: Amanda.Hallberg@noaa.gov <Amanda.Hallberg@noaa.gov>
Sent: Fri Jul 23 18:49:30 2010
Subject: NOAA NRDA follow-up Q

Hi Sarah,
Hope all is well and that you have already started your weekend. I just wanted to send a quick note with a response to a request for information that you send earlier in the week. I apologize that it took this long to track down.

With respect to your request for an update on the policy for addressing conflict of scientists paid by BP:

NOAA anticipates hiring experts and consultants to work with our agency and other natural resource damage trustees on the Natural Resource Damage and Assessment process. Because trustees may be facing significant litigation to assure that BP and other responsible parties fund assessment and restoration activities, NOAA is taking a standard pre-litigation step of requiring confidentiality agreements with those we hire, and we are not hiring experts/consultants in this process who, because they are taking funding from or are working for BP, may not be able to meet those confidentiality commitments. Each of our contracts also contains conflict of interest clauses to ensure that contractors do not work for any other entity, including BP, without the approval of NOAA.

I hope this information is helpful. As you continue to prepare for Tuesday's hearing, please let us know if there is any more information you need. Also, if in preparing you come across additional topics that you would like Tony to speak to or general questions that you would like us to have information available for, please let us know. Amanda and I will be speaking with Tony on Monday.

Again, thanks very much,
Christina

--

Christina L. Durham
Sea Grant Knauss Fellow
Office of Legislative and Intergovernmental Affairs
National Oceanic & Atmospheric Administration (NOAA)
Herbert C. Hoover Commerce Building, Room #5224
Phone: B6 Privacy
Fax: B6 Privacy
Christina.Durham@noaa.gov

LAUTENBERG Q&As

Today I am introducing the Safe Dispersants Act, which requires advance testing of dispersants and disclosure of the ingredients in those dispersants. EPA Administrator Jackson has already testified that such a change in the law is necessary. Does NOAA agree?

Answer:

- **NOAA would be happy to provide comments on this bill once we have a chance to review, but I can't speak to NOAA's support for this Act today.**

- **I can say in general that NOAA supports additional research and monitoring that would inform decision making to minimize the ecological and economic impacts from, and mitigate the effects of, oil spills on coastal and marine resources and associated communities.**

Background:

- **NOAA does not have a regulatory role in approving dispersant products. NOAA reviews contingency plans, offers scientific opinions and participates in monitoring.**
- **Specifcally:**
    - **We review area contingency plans via National Response Team and Regional Response Team;**
    - **We offer scientific opinions via NOAA's Scientific Support Team; and**
    - **We participate in monitoring for the efficacy of dispersants via the Special Monitoring of Applied Response Technologies (SMART) program.**

- The National Contingency Plan establishes a framework for use of dispersants in an oil spill response.
- EPA is responsible for approving the list of dispersants that can be used.
- Under section 311 of the Clean Water Act, the EPA is required to prepare and maintain a schedule of dispersants and other mitigating devices and substances that may be used in carrying out the National Contingency Plan.
- NRTs and RRTs:
    - NOAA serves the Department of Commerce in spill response preparedness and decision-making activities through the National Response Team and Regional

Response Teams (RRT). These teams are established by the National Contingency Plan (NCP).
    - The NCP requires the RRT and Area Committees to plan for the use or non-use of dispersants in advance of spills, to ensure that the tradeoff decisions between water column and surface/shoreline impacts are deliberated.
    - NOAA participates in the development of Area Contingency Plans. For Region VI, which includes the Gulf of Mexico, dispersant use was pre-authorized by the RRT for use in offshore water, beyond the 3 mile limit. The Region VI RRT includes EPA, USCG, and DOI, NOAA and the states of Louisiana and Texas.
    - Dispersant pre-authorization is essential to ensure quick implementation of mitigation measures during a response to mitigate environmental impacts and is undertaken in accordance with the requirements of the NCP.
- **NOAA's Scientific Support Team**
    - This team is designated as a special team in the NCP and provides a broad array of scientific services to the response, including recommendations to the Federal On-Scene Coordinator (FOSC) on the appropriate use of dispersants.
- **SMART program**
    - NOAA is a member of SMART - an interagency, cooperatively designed program to monitor the efficacy of dispersant and in-situ burning operations.
    - SMART relies on small, highly mobile teams to collect real-time data. Data are channeled to the Unified Command to help address critical questions.

In a letter from September 2009, NOAA accused the Minerals Management Service of a pattern of understating the likelihood and potential consequences of a major spill in the Gulf and the frequency of spills that have already occurred there. Sadly, NOAA has been vindicated by this spill. Do you think the re-organization of M-M-S is enough to ensure the concerns of NOAA and other agencies are adequately considered in permitting decision?

- **NOAA does play an important role in the MMS process by providing comments on MMS' plans, programs, and NEPA documents. NOAA's comments are based on our extensive science, management, and stewardship expertise related to oceans, coasts, and marine ecosystems. They are also related to our diverse legislative mandates to protect living marine resources.**

- **As for the specific letter you are speaking of, I am familiar with this letter from NOAA to MMS but I am not positioned to speak on behalf of NOAA on the specifics of your question today.**

Background:

NOAA's role in approving oil/gas exploration

- NOAA does not permit offshore drilling, MMS issues permits allowing oil and gas companies to drill pursuant to the Outer Continental Shelf Lands Act.

- The Marine Mammal Protection Act allows NOAA (and the USFWS) to authorize the incidental take of marine mammals incidental to a specific activity, including oil and gas activities, provided NOAA can make certain findings and set forth permissible methods of taking and requirements pertaining to mitigation.

- The Endangered Species Act requires federal agencies to consult with NOAA Fisheries on activities that may affect listed species. That requirement would extend to MMS or other federal agencies that permit offshore drilling.

- MMS may also be required to consult with NOAA under the Magnuson-Stevens Fishery Conservation and Management Act. Section 305(b)(2) of the MSA requires all Federal agencies to consult with NOAA on all actions authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat.

CARDIN Q&A

Transparency. Is the nature and scope of work being made available to the public? What are the requirements for public involvement? Can the residents of the Gulf, especially those impacted by the damage and knowledgeable about the ecosystems be included in assessment and restoration work?

- **We believe transparency is important and NOAA is working to share data with the public and scientists. We recognize the public's interest in the federal government's response to this crisis, and we are committed to clarity and transparency.**

- **While access to and transparency of data to inform decision making is critical, it is also important that data be provided with appropriate review and context.**

- **Legal limitations to data sharing…**
- **Requirements for public involvement...**

- **Examples of how NOAA is providing information to the public:**
  - **NOAA has launched a federal website meant to provide data and information with clarity and transparency – Geoplatform.gov (http://www.geoplatform.gov/gulfresponse/) a central online location for detailed near real-time information about the response as well as data collection associated with the Natural Resource Damage Assessment.**
  - **NOAA hosted a field trip 2 weeks ago for NGOs and national and local media to shadow a field team conducting an NRDA shoreline preassessment survey**
  - **Representatives from NOAA have participated in multiple public meetings throughout the Gulf region hosted by Sea Grant.**
  - **NOAA has provided NRDA training w/USFWS to over 120 state and federal co-trustees in the earliest days of the spill.**
  - **NOAA is participating in weekly calls hosted by White House staff for NGOs and Local Governments.**

ADDITIONAL DISPERSANT Q&As

Why doesn't NOAA have a better understanding of the effects of dispersants on marine life?

Answer:

- There has been research conducted on the effectiveness and effects of dispersants and dispersed oil for more than three decades. But **important gaps still exist**.

- The Deepwater Horizon has posed many challenges and has highlighted gaps in our understanding of the effects on dispersants at deep depths. Very little is known about the species found in the deep ocean near the Deepwater Horizon Release site and the susceptibility of these species to dispersed oil toxicity at cold temperatures and high pressures.

- This reiterates the need to have a robust and sustained oil spill research and development program across that Federal government that works closely with academia.

How would impacts of subsurface oil plumes on Gulf fisheries differ from impacts of surface oil?

Answer:

- When an oil spill occurs there are no good outcomes. Dispersant use is one of a few tools that may be employed to minimize consequences of an oil spill.

- It is important to understand the use of dispersants is an environmental tradeoff. Using dispersants decreases the environmental risks to shorelines and organisms at the surface. However, the dispersed oil increases the risk to organisms in the water column.

- Impacts of the **subsurface oil and dispersants** can include:
  - Short-lived marine animals, such as mysids, which are shrimp-like crustaceans and copepods
  - Larvae of crustaceans and fish
  - Filter feeding fish who ingest oil droplets

- Impacts of the **surface oil** can include oiling of coastlines and sensitive habitats and species such as:
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  - Fish and shrimp larvae and eggs
  - Sargassum mats that are critical habitat for some species such as the gray triggerfish and amberjacks
  - Impacts on sea birds and coastal wading birds
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Is there any base-line data available on the Gulf's deepwater ecology to understand the impact, if any, of the subsurface dispersants used for the Deepwater Horizon spill?

Answer:

- Yes, there are some base-line data available on the Gulf's deepwater habitats and ecology that could help scientists understand the impact (if any) of the subsurface dispersants that have been used for the Deepwater Horizon spill. However, the fate and transport of oil dispersed at depth is not well understood.

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MaryLee Haughwout

Policy Planning & Analysis Division

301-713-3070 x 217
National Ocean Service, NOAA

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Silver Spring, MD 20910

301-713-3070 x217 (Work)

MaryLee.Haughwout@noaa.gov (Internet)

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Middle:
Prefix:
Suffix:

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National Ocean Service, NOAA

Phone: 301-713-3070 x 217
Email: MaryLee.Haughwout@noaa.gov

Version

2.1

Received(Date): Mon, 26 Jul 2010 18:27:57 -0400
From: Michael Jarvis <Michael.Jarvis@noaa.gov>
Subject: Re: Fwd: RE: NOAA NRDA follow-up Q
To: MaryLee Haughwout <MaryLee.Haughwout@noaa.gov>,Tony Penn <Tony.Penn@noaa.gov>
Cc: Christina.Durham@noaa.gov, Joe Inslee <Joe.Inslee@noaa.gov>,John Rapp <John.Rapp@noaa.gov>, Brendan Bray <Brendan.Bray@noaa.gov>,David Holst <David.Holst@noaa.gov>
Additional Qs_EPW - OLA and GC Comments.doc

Hi all,

Attached here are some edits to the set of Q&As from a discussion I had with Lois Schiffer. Those edits are in track changes. I've shared the MMS reorg Q&A with NOAA policy for their feedback and will share that as soon as I receive it.

Thanks,
Mike

MaryLee Haughwout wrote:

> Hi All,
> Here are a few Q&As related to two of the questions from Lautenberg, the transparency question from Cardin and previously cleared dispersant questions (given it sounds like there will be questions along these lines).
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> I consider these draft - so if folks have additional thoughts on these please let me know.
>
> Thanks,
> MaryLee
>
> Christina.Durham@noaa.gov wrote:

> Subject:
> RE: NOAA NRDA follow-up Q
> From:
> "Greenberger, Sarah (Cardin)" <Sarah_Greenberger@cardin.senate.gov>
> Date:
> Mon, 26 Jul 2010 10:54:51 -0400
> To:
> 'Christine Durham' <Christina.Durham@noaa.gov>
> To:
> 'Christine Durham' <Christina.Durham@noaa.gov>
> CC:
> "'amanda.hallberg@noaa.gov'" <Amanda.Hallberg@noaa.gov>
>
> Christina, Amanda, sorry for the delay. Here is a list

of issues Senator Cardin may cover in the hearing tomorrow. We expect several members on the majority side including Senators Whitehouse, Merkley and Lautenberg. Not sure who will attend on the minority side, but Senator Vitter is a likely candidate.

* Funding for assessment and restoration work. What is the process for getting assessment work into the field? What is being paid for upfront by BP, the Oil Spill Liability Trust Fund, the Trustee agencies?

* Cost of assessing restoring, replacing, acquiring natural resources versus the $75 million limit on damages.

* BP's role in the assessment process and restoration process? BP Buying of Scientists.

* What is the scope of the assessment work? Will it be ecosystem wide? Will it be long-term? How will assessment be balanced with restoration work? Is there a preference for restoration as a remedy above the others named in NRDA including replacement?

* How are third party researchers and their work incorporated into the NRDA? Is there any peer review of the protocols or the overall study program? Is work done independently of the trustees used in the assessment (e.g. Smithsonian collection)?

* Transparency. Is the nature and scope of work being made available to the public? What are the requirements for public involvement? Can the residents of the Gulf, especially those impacted by the damage and knowledgeable about the ecosystems be included in assessment and restoration work?

* Importance of NRDA work generally and description of NOAA/FWS programs. Number of NRDAs, for what kinds of incidents, how much recovered each year. Employees, budgets, resources available for preparedness, training, equipment. Need for allocated funding from Trust Fund? FWS need for additional damage assessment authority?

-----Original Message-----
From: Christine Durham
[mailto:Christina.Durham@noaa.gov]
Sent: Sunday, July 25, 2010 11:12 PM
To: Greenberger, Sarah (Cardin);
'Christina.Durham@noaa.gov'
Cc: 'amanda.hallberg@noaa.gov'
Subject: Re: NOAA NRDA follow-up Q

Sarah,

11:15AM would be perfect. I'll speak to you then.
Thanks!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Sun Jul 25 23:04:56 2010
Subject: Re: NOAA NRDA follow-up Q

I can do 11am if that's better. I'll send that list in the morning. I am at 228-6430.
Sent from my Blackberry Wireless Handheld

----- Original Message -----
From: Christine Durham <Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin);
'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Sun Jul 25 22:04:24 2010
Subject: Re: NOAA NRDA follow-up Q

Sarah,
Thanks for your help. I can speak whenever you are free; earlier the better. 1PM works for me. I will not be at my desk tomorrow, so I can call you if that works. Please let me know.
Thanks again!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Fri Jul 23 19:30:45 2010
Subject: Re: NOAA NRDA follow-up Q

Thanks Christina. I'll have a list of issues for you tomorrow. We can touch base ahead of your conversation with Tony on Monday. 1pm would work well for me if that's not too late to be helpful. If so, let me know what your time constraints are so we can find a time that works.

Best, Sarah
Sent from my Blackberry Wireless Handheld

----- Original Message -----

From: Christina.Durham@noaa.gov
<Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin)
Cc: Amanda.Hallberg@noaa.gov
<Amanda.Hallberg@noaa.gov>
Sent: Fri Jul 23 18:49:30 2010
Subject: NOAA NRDA follow-up Q

Hi Sarah,
Hope all is well and that you have already started your weekend. I just wanted to send a quick note with a response to a request for information that you send earlier in the week. I apologize that it took this long to track down.

With respect to your request for an update on the policy for addressing conflict of scientists paid by BP:

NOAA anticipates hiring experts and consultants to work with our agency and other natural resource damage trustees on the Natural Resource Damage and Assessment process. Because trustees may be facing significant litigation to assure that BP and other responsible parties fund assessment and restoration activities, NOAA is taking a standard pre-litigation step of requiring confidentiality agreements with those we hire, and we are not hiring experts/consultants in this process who, because they are taking funding from or are working for BP, may not be able to meet those confidentiality commitments. Each of our contracts also contains conflict of interest clauses to ensure that contractors do not work for any other entity, including BP, without the approval of NOAA.

I hope this information is helpful. As you continue to prepare for Tuesday's hearing, please let us know if there is any more information you need. Also, if in preparing you come across additional topics that you would like Tony to speak to or general questions that you would like us to have information available for, please let us know. Amanda and I will be speaking with Tony on Monday.

Again, thanks very much,
Christina

--
Christina L. Durham
Sea Grant Knauss Fellow
Office of Legislative and
Intergovernmental Affairs
National Oceanic & Atmospheric
Administration (NOAA)
Herbert C. Hoover Commerce Building, Room
#5224
Phone: (202) 482-6140

Fax: (202) 482-4960
Christina.Durham@noaa.gov

--
Michael G. Jarvis
Congressional Affairs Specialist
Office of Legislative and Intergovernmental Affairs
National Oceanic and Atmospheric Administration
1401 Constitution Ave. NW, Room 5224
Washington, DC 20230
E-mail: michael.jarvis@noaa.gov
Office: 202-482-3595

ADDITIONAL DISPERSANT Q&As

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- **More research is needed**

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Field Code Changed

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Received(Date): Mon, 26 Jul 2010 18:46:14 -0400
From: Michael Jarvis <Michael.Jarvis@noaa.gov>
Subject: Re: Fwd: RE: NOAA NRDA follow-up Q
To: MaryLee Haughwout <MaryLee.Haughwout@noaa.gov>,Tony Penn <Tony.Penn@noaa.gov>
Cc: Christina.Durham@noaa.gov, Joe Inslee <Joe.Inslee@noaa.gov>,John Rapp <John.Rapp@noaa.gov>, Brendan Bray <Brendan.Bray@noaa.gov>,David Holst <David.Holst@noaa.gov>
Additional Qs_EPW - OLA and GC Comments.doc

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> From:
> "Greenberger, Sarah (Cardin)" <Sarah_Greenberger@cardin.senate.gov>
> Date:
> Mon, 26 Jul 2010 10:54:51 -0400
> To:

'Christine Durham' <Christina.Durham@noaa.gov>
To:
'Christine Durham' <Christina.Durham@noaa.gov>
CC:
"'amanda.hallberg@noaa.gov'" <Amanda.Hallberg@noaa.gov>

Christina, Amanda, sorry for the delay. Here is a list of issues Senator Cardin may cover in the hearing tomorrow. We expect several members on the majority side including Senators Whitehouse, Merkley and Lautenberg. Not sure who will attend on the minority side, but Senator Vitter is a likely candidate.

*Funding for assessment and restoration work. What is the process for getting assessment work into the field? What is being paid for upfront by BP, the Oil Spill Liability Trust Fund, the Trustee agencies?

*Cost of assessing restoring, replacing, acquiring natural resources versus the $75 million limit on damages.

*BP's role in the assessment process and restoration process? BP Buying of Scientists.

*What is the scope of the assessment work? Will it be ecosystem wide? Will it be long-term? How will assessment be balanced with restoration work? Is there a preference for restoration as a remedy above the others named in NRDA including replacement?

*How are third party researchers and their work incorporated into the NRDA? Is there any peer review of the protocols or the overall study program? Is work done independently of the trustees used in the assessment (e.g. Smithsonian collection)?

*Transparency. Is the nature and scope of work being made available to the public? What are the requirements for public involvement? Can the residents of the Gulf, especially those impacted by the damage and knowledgeable about the ecosystems be included in assessment and restoration work?

*Importance of NRDA work generally and description of NOAA/FWS programs. Number

of NRDAs, for what kinds of incidents, how much recovered each year. Employees, budgets, resources available for preparedness, training, equipment. Need for allocated funding from Trust Fund? FWS need for additional damage assessment authority?

-----Original Message-----
From: Christine Durham
[mailto:Christina.Durham@noaa.gov]
Sent: Sunday, July 25, 2010 11:12 PM
To: Greenberger, Sarah (Cardin);
'Christina.Durham@noaa.gov'
Cc: 'amanda.hallberg@noaa.gov'
Subject: Re: NOAA NRDA follow-up Q

Sarah,
11:15AM would be perfect. I'll speak to you then.
Thanks!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Sun Jul 25 23:04:56 2010
Subject: Re: NOAA NRDA follow-up Q

I can do 11am if that's better. I'll send that list in the morning. I am at 228-6430.
Sent from my Blackberry Wireless Handheld

----- Original Message -----
From: Christine Durham
<Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin);
'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Sun Jul 25 22:04:24 2010
Subject: Re: NOAA NRDA follow-up Q

Sarah,
Thanks for your help. I can speak whenever you are free; earlier the better. 1PM works for me. I will not be at my desk tomorrow, so I can call you if that works. Please let me know.

Thanks again!
Christina

----- Original Message -----
From: Greenberger, Sarah (Cardin)
<Sarah_Greenberger@cardin.senate.gov>
To: 'Christina.Durham@noaa.gov'
<Christina.Durham@noaa.gov>
Cc: 'amanda.hallberg@noaa.gov'
<amanda.hallberg@noaa.gov>
Sent: Fri Jul 23 19:30:45 2010
Subject: Re: NOAA NRDA follow-up Q

Thanks Christina. I'll have a list of issues for you tomorrow. We can touch base ahead of your conversation with Tony on Monday. 1pm would work well for me if that's not too late to be helpful. If so, let me know what your time constraints are so we can find a time that works.

Best, Sarah
Sent from my Blackberry Wireless Handheld

----- Original Message -----
From: Christina.Durham@noaa.gov
<Christina.Durham@noaa.gov>
To: Greenberger, Sarah (Cardin)
Cc: Amanda.Hallberg@noaa.gov
<Amanda.Hallberg@noaa.gov>
Sent: Fri Jul 23 18:49:30 2010
Subject: NOAA NRDA follow-up Q

Hi Sarah,
Hope all is well and that you have already started your weekend. I just wanted to send a quick note with a response to a request for information that you send earlier in the week. I apologize that it took this long to track down.

With respect to your request for an update on the policy for addressing conflict of scientists paid by BP:

NOAA anticipates hiring experts and consultants to work with our agency and other natural resource damage trustees on the Natural Resource Damage and Assessment process. Because trustees may be facing significant litigation to assure that BP and other responsible parties fund assessment and restoration activities, NOAA is taking a standard pre-litigation step of requiring confidentiality agreements with those we hire, and we are not hiring experts/consultants in this

process who, because they are taking funding from or are working for BP, may not be able to meet those confidentiality commitments. Each of our contracts also contains conflict of interest clauses to ensure that contractors do not work for any other entity, including BP, without the approval of NOAA.

I hope this information is helpful. As you continue to prepare for Tuesday's hearing, please let us know if there is any more information you need. Also, if in preparing you come across additional topics that you would like Tony to speak to or general questions that you would like us to have information available for, please let us know. Amanda and I will be speaking with Tony on Monday.

Again, thanks very much,
Christina

--
Christina L. Durham
Sea Grant Knauss Fellow
Office of Legislative and Intergovernmental Affairs
National Oceanic & Atmospheric Administration (NOAA)
Herbert C. Hoover Commerce Building, Room #5224
Phone: B6 Privacy
Fax: B6 Privacy
Christina.Durham@noaa.gov

--
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Office: B6 Privacy

LAUTENBERG Q&As

Today I am introducing the Safe Dispersants Act, which requires advance testing of dispersants and disclosure of the ingredients in those dispersants. EPA Administrator Jackson has already testified that such a change in the law is necessary. Does NOAA agree?

Answer:

- ~~**NOAA would be happy to provide comments on this bill once we have a chance to review, but I can't speak to NOAA's support for this Act today.**~~

- **While I have not yet reviewed the legislation, in general, yes ~~I can say in general that~~ NOAA would support~~s~~ additional research and monitoring such as this that would inform decision making to minimize the ecological and economic impacts from, and mitigate the effects of, oil spills on coastal and marine resources and associated communities.**

Background:

- **NOAA does not have a regulatory role in approving dispersant products. NOAA reviews contingency plans, offers scientific opinions and participates in monitoring.**
- **Specifcally:**
  - **We review area contingency plans via National Response Team and Regional Response Team;**
  - **We offer scientific opinions via NOAA's Scientific Support Team; and**
  - **We participate in monitoring for the efficacy of dispersants via the Special Monitoring of Applied Response Technologies (SMART) program.**

- The National Contingency Plan establishes a framework for use of dispersants in an oil spill response.
- EPA is responsible for approving the list of dispersants that can be used.
- Under section 311 of the Clean Water Act, the EPA is required to prepare and maintain a schedule of dispersants and other mitigating devices and substances that may be used in carrying out the National Contingency Plan.
- NRTs and RRTs:

- NOAA serves the Department of Commerce in spill response preparedness and decision-making activities through the National Response Team and Regional Response Teams (RRT). These teams are established by the National Contingency Plan (NCP).
- The NCP requires the RRT and Area Committees to plan for the use or non-use of dispersants in advance of spills, to ensure that the tradeoff decisions between water column and surface/shoreline impacts are deliberated.
- NOAA participates in the development of Area Contingency Plans. For Region VI, which includes the Gulf of Mexico, dispersant use was pre-authorized by the RRT for use in offshore water, beyond the 3 mile limit. The Region VI RRT includes EPA, USCG, and DOI, NOAA and the states of Louisiana and Texas.
- Dispersant pre-authorization is essential to ensure quick implementation of mitigation measures during a response to mitigate environmental impacts and is undertaken in accordance with the requirements of the NCP.

- **NOAA's Scientific Support Team**
  - This team is designated as a special team in the NCP and provides a broad array of scientific services to the response, including recommendations to the Federal On-Scene Coordinator (FOSC) on the appropriate use of dispersants.
- **SMART program**
  - NOAA is a member of SMART - an interagency, cooperatively designed program to monitor the efficacy of dispersant and in-situ burning operations.
  - SMART relies on small, highly mobile teams to collect real-time data. Data are channeled to the Unified Command to help address critical questions.

In a letter from September 2009, NOAA accused the Minerals Management Service of a pattern of understating the likelihood and potential consequences of a major spill in the Gulf and the frequency of spills that have already occurred there. Sadly, NOAA has been vindicated by this spill. Do you think the re-organization of M-M-S is enough to ensure the concerns of NOAA and other agencies are adequately considered in permitting decision?

- **NOAA does play an important role in the MMS process by providing comments on MMS' plans, programs, and NEPA documents. NOAA's comments are based on our extensive science, management, and stewardship expertise related to oceans, coasts, and marine ecosystems. They are also related to our diverse legislative mandates to protect living marine resources.**

- **As for the specific letter you are speaking of, I am familiar with this letter from NOAA to MMS but I am not positioned to speak on behalf of NOAA on the specifics of your question today.**

Background:

NOAA's role in approving oil/gas exploration

- NOAA does not permit offshore drilling, MMS issues permits allowing oil and gas companies to drill pursuant to the Outer Continental Shelf Lands Act.

- The Marine Mammal Protection Act allows NOAA (and the USFWS) to authorize the incidental take of marine mammals incidental to a specific activity, including oil and gas activities, provided NOAA can make certain findings and set forth permissible methods of taking and requirements pertaining to mitigation.

- The Endangered Species Act requires federal agencies to consult with NOAA Fisheries on activities that may affect listed species. That requirement would extend to MMS or other federal agencies that permit offshore drilling.

- MMS may also be required to consult with NOAA under the Magnuson-Stevens Fishery Conservation and Management Act. Section 305(b)(2) of the MSA requires all Federal

agencies to consult with NOAA on all actions authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat.

CARDIN Q&A

Transparency. Is the nature and scope of work being made available to the public? What are the requirements for public involvement? Can the residents of the Gulf, especially those impacted by the damage and knowledgeable about the ecosystems be included in assessment and restoration work?

- **We believe transparency is important and NOAA is working to share data with the public and scientists. We recognize the public's interest in the federal government's response to this crisis, and we are committed to clarity and transparency.**

- **As of Thursday, July 8, 2010, the natural resource trustees agreed to publicly post NRDA 'Preassessment' science data once it is collected, analyzed, and properly quality checked, following the U.S. Government's existing Information Quality Act. Releasing NRDA 'Preassessment' science data is rarely done in the NRDA process, but it was decided in the interest of transparency, and because of the heightened interest in this particular spill, that this information would be made public.**

- **While access to and transparency of data to inform decision making is critical, it is also important that data be provided with appropriate review and context.**

- **There are opportunities for public review and comment during the NRDA process, including during the restoration planning process where restoration projects are proposed.**

- ~~**Legal limitations to data sharing…**~~
- ~~**Requirements for public involvement…**~~

- **Examples of how NOAA is providing information to the public:**

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- **NOAA has launched a federal website meant to provide data and information with clarity and transparency – Geoplatform.gov (http://www.geoplatform.gov/gulfresponse/) a central online location for detailed near real-time information about the response as well as data collection associated with the Natural Resource Damage Assessment.**
- **NOAA hosted a field trip 2 weeks ago for NGOs and national and local media to shadow a field team conducting an NRDA shoreline preassessment survey**
- **Representatives from NOAA have participated in multiple public meetings throughout the Gulf region hosted by Sea Grant.**
- **NOAA has provided NRDA training w/USFWS to over 120 state and federal co-trustees in the earliest days of the spill.**
- **NOAA is participating in weekly calls hosted by White House staff for NGOs and Local Governments.**

Background

- Scientists receiving funding through NOAA grants, cooperative agreements, and contracts will not face any changes to the funding regardless of work they may be doing for BP or funded by BP.

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- NOAA is continuing its regular grant, cooperative agreement, and contract programs with the usual considerations of current and pending funding and without additional regard to whether the applicants/recipients are receiving BP funding.

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- NOAA hires experts and consultants to work with NOAA and other natural resource damage trustees on the Natural Resource Damage Assessment and Restoration process, the trustees may be facing significant litigation to assure that BP and other responsible parties fund the assessment and restoration activities. To that end, we are taking the normal pre-litigation step of requiring confidentiality agreements with those we hire, and are not hiring experts/consultants in this process who, because they are taking funding from or are working for BP, may not be able to meet those confidentiality commitments.

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- NOAA remains committed to the highest standards of scientific integrity and accountability for funds and programs entrusted to us

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ADDITIONAL DISPERSANT Q&As

Why doesn't NOAA have a better understanding of the effects of dispersants on marine life?

Answer:

- There has been research conducted on the effectiveness and effects of dispersants and dispersed oil for more than three decades. But **important gaps still exist**.

- The Deepwater Horizon has posed many challenges and has highlighted gaps in our understanding of the effects on dispersants at deep depths. Very little is known about the species found in the deep ocean near the Deepwater Horizon Release site and the susceptibility of these species to dispersed oil toxicity at cold temperatures and high pressures.

- This reiterates the need to have a robust and sustained oil spill research and development program across that Federal government that works closely with academia.

How would impacts of subsurface oil plumes on Gulf fisheries differ from impacts of surface oil?

Answer:

- When an oil spill occurs there are no good outcomes. Dispersant use is one of a few tools that may be employed to minimize consequences of an oil spill.

- It is important to understand the use of dispersants is an environmental tradeoff. Using dispersants decreases the environmental risks to shorelines and organisms at the surface. However, the dispersed oil increases the risk to organisms in the water column.

- Impacts of the **subsurface oil and dispersants** can include:
  - Short-lived marine animals, such as mysids, which are shrimp-like crustaceans and copepods
  - Larvae of crustaceans and fish
  - Filter feeding fish who ingest oil droplets

- Impacts of the **surface oil** can include oiling of coastlines and sensitive habitats and species such as:
  - Nearshore or inshore areas such as marshes and estuaries – critical habitats for fish and shellfish at various stages of their life-cycle
  - Fish and shrimp larvae and eggs
  - Sargassum mats that are critical habitat for some species such as the gray triggerfish and amberjacks
  - Impacts on sea birds and coastal wading birds
  - Intertidal vertebrates and invertebrates
  - Marine mammals

- **More research is needed**

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Is there any base-line data available on the Gulf's deepwater ecology to understand the impact, if any, of the subsurface dispersants used for the Deepwater Horizon spill?

Answer:

- Yes, there are some base-line data available on the Gulf's deepwater habitats and ecology that could help scientists understand the impact (if any) of the subsurface dispersants that have been used for the Deepwater Horizon spill. However, the fate and transport of oil dispersed at depth is not well understood.

- NOAA and the trustees are compiling existing data and information about the deep- and shallow-water coral communities, as well as any information about their sensitivity to dispersed oil.

- A major ongoing deepwater coral study funded by Minerals Management Service and NOAA's Office of Ocean Exploration and Research is being utilized for an initial Tier 1 Natural Resource Damage Assessment of deep coral and chemosynthetic community habitats. This study includes invaluable pre-spill baseline imagery and active *in situ* experiments. In addition, the information collected on collaborative expeditions between NOAA, MMS, and USGS over the past several years that focused on locating and characterizing deep water communities along the West Florida Shelf and the northern Gulf of Mexico shelf break, will also be helpful in providing some baseline-data for the region.

- Additional research is needed to determine the effects of oil and dispersants that are suspended in the water column on mid-water and pelagic species, as well as on deep-water corals, chemosynthetic communities (animal communities living in the deep sea on dissolved gases), and benthic habitats. Such studies can provide valuable information on the sensitivity and/or resilience of these deepwater communities and can inform response actions and assessment work in the future.

How much research has NOAA conducted on the use of dispersants on spilled oil in subsurface conditions? Has NOAA funded any University research on the use of dispersants?

Answer:

- NOAA's research on dispersants is limited to work conducted in partnership with the University of New Hampshire's Coastal Response Research Center from 2004 to 2007.

- A project between NOAA and CRRC during this time period was determining the toxicity and long-term effects of dispersants and dispersed oil on sensitive marine life. This research quantitatively compared the effect and behavior of oils with and without dispersants in different soil substrates and the effect of the dispersed oils as a function of plant growing seasons, as well as determining the effect of dispersants on oil adsorption and penetration to marsh sediment.

- Much of what we know is presented in detail in the 2005 National Research Council book "Oil Spill Dispersants: Efficacy and Effects."

- Gaps exist in our understanding despite research on the effectiveness of dispersants and dispersed oil over the past 3 decades. More information is needed about dispersants in subsurface conditions especially how dispersants work in colder temperatures or extreme pressures.

Has the volume of dispersants currently used for Deepwater Horizon ever been used in another application in such volumes and for such a duration?

Answer:

- Yes. During the IXTOC-1 well blowout in 1979 between 1 million and 2.5 million gallons of mostly Corexit dispersant products were applied over a 5 month period. This well blowout turned out to be a 9 month loing oil discharge of 10,000 to 30,000 barrels per day from an exploratory platform near Veracruz, Mexico.

Has NOAA voiced any objections or concerns with regard to the fact that we know virtually nothing about the short-term or long-term impacts of dispersants on trust resources?

Answer:

- In EPA Region VI, which includes the Gulf of Mexico, dispersant use is pre-authorized by the Regional Response Team (RRT) in offshore water, beyond the 3-mile limit.

- **Spill response often involves a series of environmental trade-offs. The overall goal is to use the response tools and techniques that will minimize the overall environmental damage from the oil. The use of dispersants is an environmental trade-off between impacts within the water column, on the sea surface (birds, mammals, and turtles in slicks) and on the shore.**

- For the Deepwater Horizon spill, the Unified Command's response posture has been to fight the spill offshore and reduce the amount of oil that comes ashore, using a variety of countermeasures including subsurface recovery, booming, skimming, burning, and dispersants. Dispersants have reduced the amount of oil impacting the shorelines.

- Under the Oil Pollution Act, state and federal Natural Resource Trustee agencies are responsible for assessing the injury, loss or destruction of natural resources due to spills – including ecological services and lost human uses of those resources. While it is still too early in the process to know what the scope of the natural resource damage assessment will be, from past experience, NOAA and DOI are concerned about impacts to fish, shellfish, marine mammals, turtles, birds and other sensitive resources as well as their habitats, including wetlands, beaches, mudflats, bottom sediments, corals and the water column. The trustees will also assess any lost human uses of these resources, for example, fishing, hunting, and beach recreational closures. The trustees are also assessing the efficacy of evaluating impacts from the response, including burning, and dispersant use at the surface and at depth.

Field Code Changed

Which agency is responsible for making the call that Corexit 9500 and not a more benign dispersant would be extensively used in the Gulf?

Answer:

- Under the National Contingency Plan, the EPA is responsible for approving the list of dispersants that can be used.

- On June 28, 2010, EPA released the first two of its newly-updated studies on the toxicities of dispersants on silversides fishes and small crustacean species. The primary purpose of these was to determine the toxicity differences among different dispersant products. Most, including the dispersant now in use at the Deepwater Horizon spill, were not statistical different from each other.

Received(Date): Wed, 04 Aug 2010 09:19:43 -0400
From: "Kate.Clark" <Kate.Clark@noaa.gov>
Subject: Re: dispersant question
To: "Lauren.B.Lugo" <Lauren.B.Lugo@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Steven Wilson <Steven.Wilson@noaa.gov>

I got this one, but I am headed out for Westerholm's testimony. If someone can answer it before I return, have at it.

Kate

Lauren.B.Lugo wrote:
> War Room-- Can someone provide Steve Wilson and me with an answer to
> this question about dispersant use? Thank you.
> Lauren
>
> -------- Original Message --------
> Subject: Re: This afternoon
> Date: Wed, 04 Aug 2010 08:58:44 -0400
> From: Steven Wilson <Steven.Wilson@noaa.gov>
> To: 'Steven.Wilson@noaa.gov' <Steven.Wilson@noaa.gov>,
> 'Lauren.B.Lugo@noaa.gov' <Lauren.B.Lugo@noaa.gov>
>
>
>
> Lauren
>
> Can you find out when dispersant was last used and where? This information will be helpful.
>
> My thought was it was last used at least two weeks ago.
>
> Steven
>
>
>
> --
> Lauren B. Lugo
> NOAA Fisheries Service
> Seafood Inspection Program
> [redacted]
> fax: [redacted]

--
Kate Clark, Regional Resource Coordinator
NOAA Office of Response and Restoration
Assessment and Restoration Division
www.darrp.noaa.gov

==========
NOAA Headquarters Detail (7/10-6/11)
1305 East-West Highway
RM 10110, SSMC4
Silver Spring, MD 20910
(Office) [redacted]
(Fax) [redacted]
==========

==========
Permanent Duty Station:
28 Tarzwell Drive
Narragansett, RI 02882
v: B6 Privacy
f: B6 Privacy
==========

Received(Date): Wed, 04 Aug 2010 09:21:32 -0400
From: Frank Parker <Frank.Parker@noaa.gov>
Subject: RE: dispersant question
To: '"Kate.Clark'" <Kate.Clark@noaa.gov>,'"Lauren.B.Lugo'" <Lauren.B.Lugo@noaa.gov>
Cc: '_HQ Deep Water Horizon Staff' <dwh.staff@noaa.gov>,'Steven Wilson' <Steven.Wilson@noaa.gov>

Preliminary answer is July 16, subsurface. Will confirm and report back.
-frank

Frank M Parker
NOAA Deepwater Horizon Science Liaison
202/482-2606 (w)
B7C Personal information

-----Original Message-----
From: Kate.Clark [mailto:Kate.Clark@noaa.gov]
Sent: Wednesday, August 04, 2010 09:20
To: Lauren.B.Lugo
Cc: _HQ Deep Water Horizon Staff; Steven Wilson
Subject: Re: dispersant question

I got this one, but I am headed out for Westerholm's testimony. If someone can answer it before I return, have at it.

Kate

Lauren.B.Lugo wrote:
> War Room-- Can someone provide Steve Wilson and me with an answer to
> this question about dispersant use? Thank you.
> Lauren
>
> -------- Original Message --------
> Subject: Re: This afternoon
> Date: Wed, 04 Aug 2010 08:58:44 -0400
> From: Steven Wilson <Steven.Wilson@noaa.gov>
> To: 'Steven.Wilson@noaa.gov' <Steven.Wilson@noaa.gov>,
> 'Lauren.B.Lugo@noaa.gov' <Lauren.B.Lugo@noaa.gov>
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> Can you find out when dispersant was last used and where? This information will be helpful.
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> My thought was it was last used at least two weeks ago.
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> Steven
>
>
>
> --
> Lauren B. Lugo
> NOAA Fisheries Service
> Seafood Inspection Program
> (301)713-2355 x145

> fax: (301)713-1081

--
Kate Clark, Regional Resource Coordinator
NOAA Office of Response and Restoration
Assessment and Restoration Division
www.darrp.noaa.gov

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NOAA Headquarters Detail (7/10-6/11)
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Silver Spring, MD 20910
(Office) 301-713-3038 x105
B7C Personal information
(Fax) 301-713-4387
==========
==========
Permanent Duty Station:
28 Tarzwell Drive
Narragansett, RI 02882
v: 401-782-3235
f: 401-782-3201
==========

Received(Date): Wed, 04 Aug 2010 11:19:11 -0400
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: Oil Budget TPs
To: Jennifer Austin <Jennifer.Austin@noaa.gov>
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Hi Jen,
Any update on the status of these TPs? I was going to excerpt for inclusion in Q&A document we're giving our folks at the Sec. Mabus meetings.
Gabby

Jennifer Austin wrote:
> Here are the TP's she used for the interview yesterday. Probably
> longer than you need, but should more or less fit the bill.
> these are with OMB/WH for comments and clearance now, and will be the
> foundation of what she says in the press briefing at the WH this
> afternoon.
>
> Linda Belton wrote:
>> Nothing long- just a couple of bullet points to explain what she is
>> going to talk about.
>>
>> ---
>> *From*: Sarri, Kristen <KSarri@doc.gov>
>> *To*: Belton, Linda <Linda.Belton@noaa.gov>; Miller, Mark
>> <Mark.W.Miller@noaa.gov>; Conner, William <William.Conner@noaa.gov>
>> *Cc*: Spring, Margaret <Margaret.Spring@noaa.gov>;
>> 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>; Simms, Pat
>> <Pat.A.Simms@noaa.gov>; Austin, Jennifer <Jennifer.Austin@noaa.gov>
>> *Sent*: Wed Aug 04 06:41:42 2010
>> *Subject*: Re: Important: for Govs call
>>
>> I am adding Pat and Jen. Pat, any chance for Jane. I don't think we
>> have anything prepared unless Mark or Bill prepared for Jane. Jen,
>> any TPs?
>>
>> ---
>> *From*: Linda Belton <linda.belton@noaa.gov>
>> *To*: Sarri, Kristen; Miller, Mark; Conner, William
>> *Cc*: Spring, Margaret; Belton, Linda; 'dwh.staff@noaa.gov'
>> <dwh.staff@noaa.gov>
>> *Sent*: Wed Aug 04 06:36:54 2010
>> *Subject*: Re: Important: for Govs call
>>
>> The pre-brief for the call is @ 9:05 am- Gov join @ 9:15.
>>
>> They request tp's or an introduction statement for Capt Gautier.
>> Also, the name of the briefer for Valerie Jarrett to announce.
>>
>> If we are sendinf something for this mornings call - they need this
>> information by 7:00am-
>>
>> We could push it to 8
>>
>>
>> ---
>> *From*: Sarri, Kristen <KSarri@doc.gov>
>> *To*: Miller, Mark <Mark.W.Miller@noaa.gov>; Conner, William

>> <William.Conner@noaa.gov>
>> *Cc*: Spring, Margaret <Margaret.Spring@noaa.gov>; Belton, Linda
>> <Linda.Belton@noaa.gov>; 'dwh.staff@noaa.gov' <dwh.staff@noaa.gov>
>> *Sent*: Wed Aug 04 06:30:25 2010
>> *Subject*: Fw: Important: for Govs call
>>
>> See note below. Not sure if someone is already working on this.
>> Ignore if you are.
>>
>> If not, Margaret, can Jane cover it? Mark and Bill if Jane can't then
>> who is the best person? I can't remember the time of the Gov call.
>>
>> ----------
>> *From*: Zichal, Heather R. <Heather_R._Zichal@who.eop.gov>
>> *To*: 'Peter.V.Neffenger@uscg.mil' <Peter.V.Neffenger@uscg.mil>;
>> Sarri, Kristen; Spring, Margaret; 'Juliette.Kayyem@dhs.gov'
>> <Juliette.Kayyem@dhs.gov>
>> *Sent*: Wed Aug 04 02:57:20 2010
>> *Subject*: Important: for Govs call
>>
>> We need to have someone from noaa on the Govs call this am to talk
>> through the oil budget we are releasing today. Has that be nailed down?
>>
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>> *From*: Smith, Sean
>> *To*: Gibbs, Robert L.; Zichal, Heather R.; Shapiro, Nicholas S.;
>> LaBolt, Ben
>> *Cc*: Browner, Carol M.
>> *Sent*: Wed Aug 04 00:24:21 2010
>> *Subject*: NYT: U.S. Finds Most Oil From Spill Poses Little
>> Additional Risk
>>
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>>
>> August 4, 2010
>> U.S. Finds Most Oil From Spill Poses Little Additional Risk
>> By JUSTIN GILLIS
>>
>> WASHINGTON — The government is expected to announce on Wednesday that
>> three-quarters of the oil from the Deepwater Horizon leak has already
>> evaporated, dispersed, been captured or otherwise eliminated — and
>> that much of the rest is so diluted that it does not seem to pose
>> much additional risk of harm.
>>
>> A government report finds that about 26 percent of the oil released
>> from BP’s runaway well is still in the water or onshore in a form
>> that could, in principle, cause new problems. But most is light sheen
>> at the ocean surface or in a dispersed form below the surface, and
>> federal scientists believe that it is breaking down rapidly in both
>> places.
>>
>> On Tuesday, BP began pumping drilling mud into the well in an attempt
>> to seal it for good. Since the flow of oil was stopped with a cap on
>> July 15, people on the Gulf Coast have been wondering if another shoe
>> was going to drop — a huge underwater glob of oil emerging to damage
>> more shorelines, for instance.
>>
>> Assuming that the government’s calculations stand scrutiny, that

>> looks increasingly unlikely. “There’s absolutely no evidence that
>> there’s any significant concentration of oil that’s out there that we
>> haven’t accounted for,” said Jane Lubchenco, head of the National
>> Oceanic and Atmospheric Administration, the lead agency in producing
>> the new report.
>>
>> She emphasized, however, that the government remained concerned about
>> the ecological damage that has already occurred and the potential for
>> more, and said it would continue monitoring the gulf.
>>
>> “I think we don’t know yet the full impact of this spill on the
>> ecosystem or the people of the gulf,” Dr. Lubchenco said.
>>
>> Among the biggest unanswered questions, she said, is how much damage
>> the oil has done to the eggs and larvae of organisms like fish, crabs
>> and shrimp. That may not become clear for a year or longer, as new
>> generations of those creatures come to maturity.
>>
>> Thousands of birds and other animals are known to have been damaged
>> or killed by the spill, a relatively modest toll given the scale of
>> some other oil disasters that killed millions of animals. Efforts are
>> still under way in Louisiana, Mississippi, Alabama and Florida to
>> clean up more than 600 miles of oiled shoreline. The government and
>> BP collected 35,818 tons of oily debris from shorelines through Sunday.
>>
>> It remains to be seen whether subtle, long-lasting environmental
>> damage from the spill will be found, as has been the case after other
>> large oil spills.
>>
>> The report, which is to be unveiled on Wednesday morning, is a result
>> of an extensive effort by federal scientists, with outside help, to
>> add up the total volume of oil released and to figure out where it went.
>>
>> The lead agency behind the report, the oceanic and atmospheric
>> administration, played down the size of the spill in the early days,
>> and the Obama administration was ultimately forced to appoint a
>> scientific panel that came up with far higher estimates of the flow
>> rate from the well. Whether the new report will withstand critical
>> scrutiny is uncertain; advocacy groups and most outside scientists
>> had not learned of it on Tuesday.
>>
>> The government announced early this week that the total oil release,
>> from the time the Deepwater Horizon exploded on April 20 until the
>> well was effectively capped, was 4.9 million barrels, plus or minus
>> 10 percent. That estimate makes the Deepwater Horizon disaster the
>> largest marine spill in history. It is surpassed on land by a 1910
>> spill in the California desert.
>>
>> As the scientists did their calculations, they were able to rely on
>> direct measurements of the fate of some of the oil that spewed from
>> the broken well. For example, BP and its contractors succeeded in
>> capturing about 17 percent of it with various containment mechanisms,
>> the report says.
>>
>> The outcome for much of the oil could not be directly measured, but
>> had to be estimated using protocols that were scrutinized by
>> scientists inside and outside the government, Dr. Lubchenco said.
>>

>> The report calculates, for example, that about 25 percent of the
>> chemicals in the oil evaporated at the surface or dissolved into
>> seawater in the same way that sugar dissolves in tea. (The government
>> appears to have settled on a conservative number for that estimate,
>> with the scientific literature saying that as much as 40 percent of
>> the oil from a spill can disappear in this way.)
>>
>> The aggressive response mounted by BP and the government — the
>> largest in history, ultimately involving more than 5,000 vessels —
>> also played a role in getting rid of the oil, the report says. Fully
>> 5 percent of the oil was burned at the surface, it estimates, while 3
>> percent was skimmed and 8 percent was broken up into tiny droplets
>> using chemical dispersants. Another 16 percent dispersed naturally as
>> the oil shot out of the well at high speed.
>>
>> All told, the report calculates that about 74 percent of the oil has
>> been effectively dealt with by capture, burning, skimming,
>> evaporation, dissolution or dispersion. Much of the dissolved and
>> dispersed oil can be expected to break down in the environment,
>> though federal scientists are still working to establish the precise
>> rate at which that is happening.
>>
>> “I think we are fortunate in this situation that the rates of
>> degradation in the gulf ecosystem are quite high,” Dr. Lubchenco said.
>>
>> The remaining 26 percent of the oil “is on or just below the surface
>> as light sheen or weathered tar balls, has washed ashore or been
>> collected from the shore, or is buried in sand and sediments,” the
>> report says.
>>
>> Some fishermen in Louisiana are worried about the buried oil, fearing
>> that storms could stir it up and coat vital shrimp or oyster grounds,
>> a possibility the government has not ruled out.
>>
>> Testing of fish has shown little cause for worry so far, and fishing
>> grounds in the gulf are being reopened at a brisk clip. At one point
>> the government had closed 36 percent of federal gulf waters to
>> fishing, but that figure is now down to 24 percent and is expected to
>> drop further in coming weeks.
>>
>> States are also reopening fishing grounds near their coasts. The big
>> economic question now is whether the American public is ready to buy
>> gulf seafood again.
>>
>> The new government report comes as BP engineers began pumping heavy
>> drilling mud into the stricken well on Tuesday, with the hope of
>> achieving a permanent seal or at least revealing critical clues about
>> how to kill the well before the end of the month.
>>
>> Through the afternoon, in what is known as a static kill, engineers
>> pumped mud weighing about 13.2 pounds per gallon at slow speeds from
>> a surface vessel through a pipe into the blowout preventer on top of
>> the well. If all goes well, cement may be applied over the next few
>> days. But officials said they could be confident the well was plugged
>> only when one of two relief wells now being drilled was completed,
>> allowing the well to be completely sealed with cement.
>>
>> “The static kill will increase the probability that the relief well

>> will work," Thad W. Allen, the retired Coast Guard admiral who is
>> leading the federal spill response effort, told reporters on Tuesday.
>> "But the whole thing will not be done until the relief well is
>> completed."
>>
>> The static kill operation could last for close to three days. After
>> it is completed, work can resume on the final 100 feet of the first
>> relief well, which officials say should be completed by Aug. 15
>> unless bad weather intervenes.
>>
>

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Received(Date): Thu, 05 Aug 2010 12:55:51 -0400
From: "Pat A. Simms" <Pat.A.Simms@noaa.gov>
Subject: RE: FDA Commish
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Cc: "'eric.schwaab@noaa.gov'" <Eric.Schwaab@noaa.gov>,"'John.Oliver@noaa.gov'" <John.Oliver@noaa.gov>,"christopher.meaney" <Christopher.Meaney@noaa.gov>,Gloria Thompson <Gloria.Thompson@noaa.gov>,"DWH.staff@noaa.gov" <dwh.staff@noaa.gov>, Ryan Wulff <Ryan.Wulff@noaa.gov>,"GRETCHEN.BATH.MARTIN@NOAA.GOV" <Gretchen.Bath.Martin@noaa.gov>
Pat A Simms.vcf

Monica --
They just called and asked for a time to call her back, I gave them 2:00pm =
today. Would you please let me know if this is a one-on-one
Call? Thanks.

Pat

-----Original Message-----
From: Monica Medina [mailto:monica.medina@noaa.gov]
Sent: Thursday, August 05, 2010 12:31 PM
To: 'Pat.A.Simms@noaa.gov'; 'margaret.spring@noaa.gov'
Cc: 'eric.schwaab@noaa.gov'; 'John.Oliver@noaa.gov'
Subject: FDA Commish

Pat and Margaret - just a heads up. I expect commissioner Hamburg of FDA t=
o reach out to Dr. Lubchenco today on seafood safety and dispersants. I wi=
ll forward the final talking points once we have them. Collaboration on th=
ese has been excellent. I will let you know if I hear more from them. Tha=
nks, Monica

Pat.A.Simms

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Last Revision

20100625T144327Z

Received(Date): Thu, 05 Aug 2010 13:30:00 -0400
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: NY Times article on Oil Budget
To: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

August 4, 2010
U.S. Finds Most Oil From Spill Poses Little Additional Risk
By JUSTIN GILLIS

WASHINGTON — The government is expected to announce on Wednesday that three-quarters of the oil from the Deepwater Horizon leak has already evaporated, dispersed, been captured or otherwise eliminated — and that much of the rest is so diluted that it does not seem to pose much additional risk of harm.

A government report finds that about 26 percent of the oil released from BP's runaway well is still in the water or onshore in a form that could, in principle, cause new problems. But most is light sheen at the ocean surface or in a dispersed form below the surface, and federal scientists believe that it is breaking down rapidly in both places.

On Tuesday, BP began pumping drilling mud into the well in an attempt to seal it for good. Since the flow of oil was stopped with a cap on July 15, people on the Gulf Coast have been wondering if another shoe was going to drop — a huge underwater glob of oil emerging to damage more shorelines, for instance.

Assuming that the government's calculations stand scrutiny, that looks increasingly unlikely. "There's absolutely no evidence that there's any significant concentration of oil that's out there that we haven't accounted for," said Jane Lubchenco, head of the National Oceanic and Atmospheric Administration, the lead agency in producing the new report.

She emphasized, however, that the government remained concerned about the ecological damage that has already occurred and the potential for more, and said it would continue monitoring the gulf.

"I think we don't know yet the full impact of this spill on the ecosystem or the people of the gulf," Dr. Lubchenco said.

Among the biggest unanswered questions, she said, is how much damage the oil has done to the eggs and larvae of organisms like fish, crabs and shrimp. That may not become clear for a year or longer, as new generations of those creatures come to maturity.

Thousands of birds and other animals are known to have been damaged or killed by the spill, a relatively modest toll given the scale of some other oil disasters that killed millions of animals. Efforts are still under way in Louisiana, Mississippi, Alabama and Florida to clean up more than 600 miles of oiled shoreline. The government and BP collected 35,818 tons of oily debris from shorelines through Sunday.

It remains to be seen whether subtle, long-lasting environmental damage from the spill will be found, as has been the case after other large oil spills.

The report, which is to be unveiled on Wednesday morning, is a result of an extensive effort by federal scientists, with outside help, to add up

the total volume of oil released and to figure out where it went.

The lead agency behind the report, the oceanic and atmospheric administration, played down the size of the spill in the early days, and the Obama administration was ultimately forced to appoint a scientific panel that came up with far higher estimates of the flow rate from the well. Whether the new report will withstand critical scrutiny is uncertain; advocacy groups and most outside scientists had not learned of it on Tuesday.

The government announced early this week that the total oil release, from the time the Deepwater Horizon exploded on April 20 until the well was effectively capped, was 4.9 million barrels, plus or minus 10 percent. That estimate makes the Deepwater Horizon disaster the largest marine spill in history. It is surpassed on land by a 1910 spill in the California desert.

As the scientists did their calculations, they were able to rely on direct measurements of the fate of some of the oil that spewed from the broken well. For example, BP and its contractors succeeded in capturing about 17 percent of it with various containment mechanisms, the report says.

The outcome for much of the oil could not be directly measured, but had to be estimated using protocols that were scrutinized by scientists inside and outside the government, Dr. Lubchenco said.

The report calculates, for example, that about 25 percent of the chemicals in the oil evaporated at the surface or dissolved into seawater in the same way that sugar dissolves in tea. (The government appears to have settled on a conservative number for that estimate, with the scientific literature saying that as much as 40 percent of the oil from a spill can disappear in this way.)

The aggressive response mounted by BP and the government — the largest in history, ultimately involving more than 5,000 vessels — also played a role in getting rid of the oil, the report says. Fully 5 percent of the oil was burned at the surface, it estimates, while 3 percent was skimmed and 8 percent was broken up into tiny droplets using chemical dispersants. Another 16 percent dispersed naturally as the oil shot out of the well at high speed.

All told, the report calculates that about 74 percent of the oil has been effectively dealt with by capture, burning, skimming, evaporation, dissolution or dispersion. Much of the dissolved and dispersed oil can be expected to break down in the environment, though federal scientists are still working to establish the precise rate at which that is happening.

“I think we are fortunate in this situation that the rates of degradation in the gulf ecosystem are quite high,” Dr. Lubchenco said.

The remaining 26 percent of the oil “is on or just below the surface as light sheen or weathered tar balls, has washed ashore or been collected from the shore, or is buried in sand and sediments,” the report says.

Some fishermen in Louisiana are worried about the buried oil, fearing that storms could stir it up and coat vital shrimp or oyster grounds, a possibility the government has not ruled out.

Testing of fish has shown little cause for worry so far, and fishing grounds in the gulf are being reopened at a brisk clip. At one point the government had closed 36 percent of federal gulf waters to fishing, but that figure is now down to 24 percent and is expected to drop further in coming weeks.

States are also reopening fishing grounds near their coasts. The big economic question now is whether the American public is ready to buy gulf seafood again.

The new government report comes as BP engineers began pumping heavy drilling mud into the stricken well on Tuesday, with the hope of achieving a permanent seal or at least revealing critical clues about how to kill the well before the end of the month.

Through the afternoon, in what is known as a static kill, engineers pumped mud weighing about 13.2 pounds per gallon at slow speeds from a surface vessel through a pipe into the blowout preventer on top of the well. If all goes well, cement may be applied over the next few days. But officials said they could be confident the well was plugged only when one of two relief wells now being drilled was completed, allowing the well to be completely sealed with cement.

“The static kill will increase the probability that the relief well will work,” Thad W. Allen, the retired Coast Guard admiral who is leading the federal spill response effort, told reporters on Tuesday. “But the whole thing will not be done until the relief well is completed.”

The static kill operation could last for close to three days. After it is completed, work can resume on the final 100 feet of the first relief well, which officials say should be completed by Aug. 15 unless bad weather intervenes.

Received(Date): Thu, 05 Aug 2010 14:32:52 -0700
From: John Stein <John.E.Stein@noaa.gov>
Subject: Re: FW: convesation w FDA commissioner
To: Monica Medina <Monica.Medina@noaa.gov>
Cc: "'john.oliver@noaa.gov'" <John.Oliver@noaa.gov>,"'Steven.Wilson@noaa.gov'" <Steven.Wilson@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>,"'Lauren.B.Lugo@noaa.gov'" <Lauren.B.Lugo@noaa.gov>,Eric Schwaab <Eric.Schwaab@noaa.gov>,Margaret Spring <Margaret.Spring@noaa.gov>,"David.Kennedy@noaa.gov" <David.Kennedy@noaa.gov>,"Dave.Westerholm" <Dave.Westerholm@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

Monica,

From John S and Steven W., here is our view on the 4 asks:

1. We do not have archived samples for sensory, so would need new samples; however, in talking with FDA staff, we both agree that re-sampling is not required. Because in reviewing all of the data it was clear that the sensory analysts noted when there was a chemical odor, and this verified thru discussions with all analysts. However, any time a chemical order was noted the sample passed because there was not sufficient failures.

2. Ok. We will verify with FDA.

3. More then happy to work with the Dauphin Island lab, in fact one of our past post-docs is working there, and she is excellent.

4. In Pascagoula, there are 2 FDA staff on site who are involved/aware of the processing, initial results and help to resolve any issues. We are working side by side. I see them daily.

JS/SW

On 8/5/2010 2:08 PM, Monica Medina wrote:

> Johns and Steves and Lauren – Please see below. Please advise asap if there is any reason why we could not move forward on the four requests from FDA? Do we still have the samples we tested before? With respect to number 4, is there a way we can keep the states in the loop and give them good information on timing, without making it look like either we or FDA are slowing down the completion of testing? Had we been telling the states we were done, but not letting FDA know. I guess the bottom line is, we need to be very closely tied to them at every step in the process and this is especially true on our interactions with the states and others outside the federal family.
>
> Where are the final talking points?? I know we were waiting for something from the White House? Did they already come through and I missed it?

Finally, I think Margaret will be backing me up on all things seafood safety while I am away. I will check email and can assist, but if you need immediate assistance, she will be the one.

Daves – this is just an fyi for you.

Thanks, MOnica

From: Jane Lubchenco [mailto:Jane.Lubchenco@noaa.gov]
Sent: Thursday, August 05, 2010 2:52 PM
To: Monica Medina
Cc: Margaret Spring
Subject: convesation w FDA commissioner

Dr. Hamburg and I just spoke via phone. This is the second conversation we've had; we agreed it would be useful for us to touch base occasionally and make sure that things are working as well as possible between NOAA and FDA. She indicated she thinks we're in a good place and is comfortable with our interactions, protocols and plans. They have four asks for us:

1) Would we be able to (a) reanalyze with sensory tests some of the samples in the freezer from state areas already opened (LA, FL, MS) or (b) analyze new samples from those areas to reassure everyone that those areas are free of dispersant contaminants?

2) FDA will be asking the Pascagoula lab to do some additional samples from areas in MS and AL they had talked about opening today.

3) Could NOAA work closely with FDA scientists in developing the chemical tests for dispersants, specifically the screening methodologies. Their Dauphin Isl lab has some capacity to help with this.

4) As we process samples from states (sensory tests), could we simply give FDA the results without telling the states that we've passed them along?

I told Dr. Hamburg that I would consult with our team and let her know asap if any of the above is not feasible. I indicated that we are pushing the envelope as it

is in processing samples and additional requests would necessarily come at the expense of something else, so we would need to evaluate the relative urgency of different sample processing needs. She fully understood that. I told her I had some concerns about request #4, but in the guise of being fully transparent; she understands that but is trying to lower states' expectations that FDA can process samples immediately. Perhaps what's needed here is to clarify what a reasonable time frame is for each step in the process and then be transparent about where we are in the process.

Received(Date): Fri, 06 Aug 2010 14:18:02 -0400
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: Re: Oil budget Q&A
To: Jen.Pizza@noaa.gov
Cc: _HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

I haven't had a chance to work on this beyond the two documents originally attached.
I do not think the framework of "it's a little bit of dispersant in a very large ocean" is going to be effective (Hayward tried this and was mocked).
I thought that Murawski's framing was good: dispersant was applied where there was oil, so we would expect that wherever there is dispersant, there would be oil. We are testing for oil. The probability of dispersant without oil in the environment is low.

Jen.Pizza wrote:
> Gabby - where are you with this?
> I would like to forward the info to kris sarri to respond to her
> request at 1:44pm (subject)* - timely talkers.
> *Thoughts?
>
> Gabrielle Dreyfus wrote:
>> Hi Team,
>> Lara, Kate, and I have been working on pulling together questions
>> that are coming in and answers that have been generated. Attached are
>> two documents that we've been working on. Please let us know if you
>> are also working on this topic.
>> Gabby

Received(Date): Fri, 06 Aug 2010 14:20:36 -0400
From: Steve Murawski <Steve.Murawski@noaa.gov>
Subject: Re: Timely Talkers
To: "Sarri, Kristen" <KSarri@doc.gov>
Cc: "'dwh.staff@noaa.gov'" <dwh.staff@noaa.gov>,"Gilson, Shannon" <SGilson@doc.gov>, Lauren B Lugo <Lauren.B.Lugo@noaa.gov>
08-05-2010 Dispersant Fact Sheet sam-kg sm.doc

Kris,

This was the last version I saw. Perhaps Kevin has the final version

Steve

Sarri, Kristen wrote:

> Did you get my earlier on this - email is screwy today.
>
> Is anyone working on this request?

From: Fitzpatrick, Michael A. <Michael_A._Fitzpatrick@omb.eop.gov>
To: Sarri, Kristen
Cc: Beck, Nancy <Nancy_Beck@omb.eop.gov>
Sent: Fri Aug 06 12:29:08 2010
Subject: Fw: Talkers

Can we discuss ASAP. Thx.

From: Beck, Nancy
To: Fitzpatrick, Michael A.
Sent: Fri Aug 06 12:26:40 2010
Subject: FW: Talkers

From: Beck, Nancy
Sent: Thursday, August 05, 2010 5:14 PM
To: 'Griffis, Kevin'; 'Murawski, Steve'
Subject: FW: Talkers

Kevin/Steve-

We are still struggling a bit with the talker regarding dispersant application.

Is it possible to flesh out Michaels suggested framework (see below).

Thanks,
Nancy

From: Fitzpatrick, Michael A.
Sent: Thursday, August 05, 2010 3:30 PM
To: Beck, Nancy
Subject: Re: Talkers

Can't we just say dispersants were added in relatively small volumes as compared with both the oil they we applied to and Gulf Waters, and thus were highly diluted.

1.8 million gallons added on surface and subsea.

Compared to;

4.9 million barrels (x millions of gallons) of oil released

X gazillion gallons of gulf waters in areas affected by oil (closed areas could be a proxy)

XX gazillion of gallons of water in Gulf as a whole (optional).

?

Acres is meaningless

My 2 cents

Dispersants Fact Sheet

Summary: Gulf seafood is safe to eat.

► To date, no seafood samples have failed sensory testing due to contamination with oil and dispersant, or other contaminants that would impact the safety of seafood.

► Scientific data indicate that the dispersants used to combat the oil spill break down rapidly and become highly dispersed in Gulf waters.

► Scientific data indicate that dispersants do not accumulate in seafood.

► Dispersants were not applied in areas currently being considered for reopening to fishing.

► Due to precautionary closures and rigorous testing, there have been no credible reports of people reporting oil/dispersant tainted seafood nor reports of tainted seafood in the marketplace

Why Dispersants Were Used in the Gulf: Dispersants served as an important tool to keep oil from impacting sensitive wetlands, beaches, and marshes. Dispersants were only used where there was oil and were last applied in the Gulf on July 19th.

How Dispersants Were Applied: Dispersants used in the BP Oil spill were applied at the surface and at the wellhead on the seafloor at an application rate of 5 gallons per acre. A total of 1.8 million gallons of dispersant was used. For comparison, that's one one-hundredth of the volume of oil that leaked into the Gulf.

Dispersants Have Diluted and Biodegraded in Gulf Waters: Dispersants are designed to dissipate and biodegrade quickly. Water sampling in the Gulf shows that they're doing just that.[1]

- ξ NOAA and EPA have tested 2,195 water samples in the deep waters of the Gulf for components of dispersants. Of all the water samples tested, only two samples showed a dispersant component, propylene glycol, at detectable levels in the water. Those samples were taken close to the wellhead on June 3 and June 5. The water samples that showed detectable levels were collected very near the wellhead where the dispersant was applied and were collected in an area that is not being considered for reopening.

- ξ In addition, EPA has evaluated 301 surface water samples for the presence of dispersant components. These water samples were collected near the shorelines. No dispersant-related compounds were detected in any of these samples.

[1] EPA data website

Expert Sensory Analysis: Experts trained in sensory analysis have been testing Gulf seafood for the presence of contaminants. FDA, NOAA, and cooperating state labs have done additional chemical testing to detect oil contamination in seafood.

- To date, no samples have failed sensory testing due to contamination by oil and dispersant, or other contaminants that would impact the safety of seafood.

- Data indicate that the dispersants used in the Deepwater Horizon response are unlikely to build up in the flesh of the fish.[2] Because of their physical properties, these compounds do not penetrate the gills or bodies of fish, and will not be concentrated in edible tissues of seafood.

- To further ensure that fishermen and consumers can have confidence that seafood coming from open Gulf waters is safe, FDA and NOAA have expanded the sensory testing procedures. Sensory experts are trained to detect a combination of oil and dispersant and to note anything that generally should not appear in fish flesh. Even though we don't expect dispersants to be present where oil is not, the panelists' training has now been expanded to include training to detect dispersant alone.

- We do not expect sensory experts to find dispersant alone for several reasons:

    1. Dispersant was only used where there was oil present. Because of this, in sensory testing, the scent of oil would immediately be observed and would likely overpower the scent of dispersant. Sensory experts are trained to fail a sample with any oil scent.

    2. No dispersant has been applied to Gulf waters since July 19, and dispersant dissipates quickly.

    3. Of all the water samples tested, only two showed detectable levels of dispersant; these samples were collected in an area that is not being considered for reopening.

Future Research Related to Seafood Safety: Out of an abundance of caution, and in order to gather additional information, further research is ongoing.

- NOAA is conducting additional studies to reaffirm that dispersants do not constitute a threat of accumulation in tissues of fish and shellfish and thus are not a risk to safety for human consumption of seafood harvested from the Gulf of Mexico.

- NOAA and FDA are currently developing a chemical test for dispersants in edible fish flesh, and continue to study the long-term impacts of chemical dispersants.

- The federal government will take any new, relevant, information into account in assessing any potential risk to public health.

[2] Cite FDA Bolger memorandum on dispersants.

Received(Date): Sat, 07 Aug 2010 17:59:56 -0400
From: "Danielle.Rioux" <Danielle.Rioux@noaa.gov>
Subject: SERO Remarks for review
To: Buck Sutter <Buck.Sutter@noaa.gov>,Christopher Meaney <Christopher.Meaney@noaa.gov>, dwh.staff@noaa.gov
SERO_Allhands.docx

Hello Buck,
I have attached a draft of Dr. Lubchenco's remarks for her visit to the SERO. Would you mind looking them over for accuracy with regard to what the office has done with DWH? I appreciate anything you have to add.

Regards,
Danielle

--
Danielle Rioux
Program Coordination Officer
Office of the Under Secretary
Sea Grant Fellow
National Oceanic & Atmospheric Administration
1401 Constitution Ave NW, Rm. 5811
Washington, DC 20230

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The Honorable Dr. Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere, and the Administrator of NOAA
NMFS Southeast Regional Office Town Hall
August 9, 2010
Remarks prepared for Delivery

Opening: I would like the first thing I say to you today to be THANK YOU. For everyone here who has helped the response in the gulf, THANK YOU. For all of you who have helped backfill those who have been pulled away to Gulf response activities, THANK YOU. For your hospitality in hosting other NOAA staff during this time, THANK YOU. For focusing the passion you have for your work, the extra hours, the time away from family and loved ones, THANK YOU. I am proud to stand with you today, and I want you to know that every effort you have made is greatly appreciated.

Transition: As, you all know the President sign the new National Policy for the Stewardship for the Ocean, Coasts and Great Lakes a couple of weeks ago. I know a lot of you have questions about

Document ID: 0.7.19.1387.1

the new National Ocean Policy—the "NOP"—and CMSP, and what it means to you. Let's start by taking a look at the size and scope of the issue, by looking at all you have played a role in with regard to DWH.

I. Characterizing NMFS SERO

A. DWH Response & Recovery

1. Pascagoula Lab and Fisheries Science

a. Seafood safety

b. Turtle and Marine Mammal Strandings

2. Public Engagement—Fisheries Issues

a. Explaining how closures protect food security

b. Pushing out word to fishermen to observe closures

c. Answering questions and getting out in the community

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3. Enforcement both to punish misfeasance, and instill confidence in Gulf "brand."
4. Public Engagement—for the Federal Family

Transition: But stop and think. There's a very good why SERO played such an integral role

B. Three Individual NMFS FMCs creates a panoramic understanding of adjacent, and enchained ecosystems

Transition: Varieties of Ecosystem are only one element of NMFS SERO's expertise.

C. Non-Fishery Issues Impacting Fishery Management

1. The Gulf as an "energy coast."
2. Widely divergent cultures and ethnicities.
3. Active marine commerce
4. Close proximity to numerous foreign jurisdictions and fisheries

Document ID: 0.7.19.1387.1

5. Heavy and persistent DOJ-style law enforcement of illegal activities including but not limited to smuggling, drug trafficking, and illegal immigration.
6. Broad spectrum of coastal hazards, from erosion to hurricanes

Transition: So what does all this mean for NMFS SERO in light of the new National Ocean Policy? Let's start with geography:

II. Introducing the NOP in the Context of SERO

A. Three individual Coastal and Marine Spatial Planning Regions—coextensive with the FMCs – they also align with Large Marine Ecosystems and the existing Regional Governance Organizations:

1. Gulf of Mexico
2. South Atlantic
3. Carribean

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Transition: Now let's examine the role of Regions in implementing CMSP

B. Responsibilities of Regions

1. Support the development of Coastal Marine Spatial Plans which includes the development of Regional Priorities and the coordination of Federal, State, Tribal, and local governments

Transition: If you were public stakeholders, I'd probably skip ahead to my next major bullet, but as NOAA personnel, you should understand how the NOP Regions are actually administered from a bureaucratic standpoint.

C. Regional Planning Bodies

1. The default administrative unit for each CMSP region is the Regional Planning Body

2. Composition

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a. Representatives from federal agencies with authorities that are applicable to CMSP...so we are 1 of those in the federal "pack."

b. Representatives from State governments

c. Representatives from Tribal governments

3. Government or Government-like entities that are NOT on RPBs

a. County governments—too numerous

b. FMCs—not included because they are only quasi-governmental. Instead the Policy provides that they should have specific input into the development of CMSPs. Also, the Policy does not completely close the door to FMCs being on the RPBs, the National Ocean Council will reevaluate FMC membership on RPBs in the future.

Document ID: 0.7.19.1387.1

4. Every region is unique, however…and Regions may choose to adopt an existing Regional Ocean Governance Organization or stand up a completely different body as the RPB.

Transition: Here in SERO, we have exactly the kind of Regional Governance Organization that raises questions about the interface with the NOP: The Gulf of Mexico Alliance.

D. GOMA

1. GOMA offers a great example of inter-governmental collaboration at the State level—one that the federal family is starting to participate in, and learn from.

2. The future of GOMA

a. Potentially, GOMA could grow to include the other entities that make up an RPB, and assume those functions.

Document ID: 0.7.19.1387.1

b. Or, it could grow to become the lead regional governance body for ocean and coastal issues…and organize an RPB to manage CMSP as a subcommittee.

c. Or it could remain an alliance of State governments, and serve as an advisory and coordinating body to support the State representatives to the Gulf RPB.

Transition: And now…the question you've all been waiting for: what about SERO? What does it all mean for SERO personnel?

III. The National Ocean Policy and SERO

A. NOAA and the NOP

1. The National Ocean Policy contains 9 priority objectives that outline how we as a federal government will do business and areas of special emphasis that we need to draw our attention to –they include ecosystem based management and

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CMSP – which NOAA has been practicing for quite some time. Specific to CMSP, it mandates cooperation among all ocean and coastal stakeholders.

a. No playing favorites…preserve traditional uses but make room for emerging uses.

b. Recognize the collective impact of ALL stakeholder activity on coastal and marine ecosystems

c. Make joint decisions on how to balance that collective portfolio of coastal activity to maintain and grow coastal prosperity…but ensure that our children will inherit our standard of living.

2. With its panoramic vision, NOAA is only one of many players…after all, each RPB starts with us

Document ID: 0.7.19.1387.1

and other federal representatives…plus the states…plus the tribes. That's a lot of people.

3. Therefore, to be effective and credible, NOAA must send a representative that is well-respected by colleagues, and supported by a full team drawing from the expertise of all of NOAA's line offices.

4. The NOAA Policy Office and the NOAA Ocean and Coastal Council (NOC-C) will be working with the NOAA Regional Collaboration Teams to identify NOAA's representative who will sit on the RPBs.

Transition: That having been said, some lines will hit the ground running because CMSP-like planning is already their "bread and butter." In my opinion, that's where SERO sits.

B. NMFS SERO and the NOP

1. NMFS SERO Assets

Document ID: 0.7.19.1387.1

a. Mature scientific understanding of marine and coastal ecosystems

b. Experience with stakeholder groups, and established relationships of trust

c. Insight from working on three CMSP regions

   i. Multi-ecosystem issues

   ii. Sensitivity to cross-regional stakeholder issues

   iii. Internal organization to support multiple regions…and coordinate them…and identify extremely high value priorities that have multi-regional impacts.

Transition: And now…the perennial question: resources.

2. CMSP on a national scale is unprecedented…and it's hard to predict the resources we will ultimately need.

Document ID: 0.7.19.1387.1

a. I am calling upon NOAA Leadership and the rest of NOAA to bring all of our resources to bear on this National Ocean Policy. The nine National Priority Objectives in the National Ocean Policy align with NOAA's strategic plan so this does not take us off our course – rather it brings focus to what we need to be doing. Ensuring the effective implementation of this Policy is not only a Presidential and Administration-wide priority, it is NOAA priority and we need to direct our efforts to this end."

b. For FY11, I can report that the Senate's version has $7.6 million for our CMSP program…and the House version has $20 million for competitive regional ocean partnership grants that could be used for

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CMSP. I am hoping that this is not a coincidence…but until a bill is signed into law, we won't know for certain.

c. Even with this added funding, implementing CMSP will be a challenge, and our experience will inform our future budget requests.

d. Recognize, however, that gauging resource needs will need to balance factors such as these:

   i. the fact that we are already doing many CMSP activities…like ecosystem-based planning, and stakeholder engagement

   ii. the extra resource needed to include more stakeholders and their activities

Document ID: 0.7.19.1387.1

iii. the effort to support robust participation in the RPBs

Closing: As you can see from what I have laid out the NOP was not only the end of the journey of the Ocean Policy Task Force, but it is also the beginning of our journey as a Nation into the future. The work for NOAA will be focused, and the opportunities the policy creates are great. It will take a coordinated and diligent effort to ensure that we use these opportunities to further our mission, of Science, Stewardship and Service.

This office has an unmatched ability to contribute, and I thank you for your work. The effort you have put into the DWH spill response, as well as your work to meet all of your other responsibilities is greatly appreciated. I hope that your are proud of what this office has done. To be here with you is an honor. Thank you.

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Received(Date): Sun, 22 Aug 2010 13:33:42 -0500
From: Jean Cowan <Jean.Cowan@noaa.gov>
Subject: Transition document
To: Pat Montanio <Pat.Montanio@noaa.gov>,"'john.rapp@noaa.gov'" <John.Rapp@noaa.gov>,Michele Miller <Michele.Miller@noaa.gov>,Patrick Rutten <Patrick.Rutten@noaa.gov>
Transition from Response to Recovery_08222010.docx

Hi Pat M,
Attached is a revised, clean version of the transition document with Patrick's and my additions accepted. If you are not sure of the changes, you can see the track changes version in the email that Patrick sent Friday evening at 6:30 ET.
Thanks,
Jean

Pre-decisional; deliberative; do not distribute

NOAA transition from DWH Response to Gulf Recovery

Purpose and Need

As focus in the Gulf moves from response and clean up to recovery and restoration, it will be necessary for NOAA to align its resources to most effectively support the long term recovery of the Gulf. Secretary Mabus will be recommending a 'plan of federal support for the long term economic and environmental restoration for the Gulf Coast region." NOAA will play a key role in these efforts from its continued support for the Deepwater Horizon response, to long term monitoring and assessment of the Gulf, to the Natural Resources Damage Assessment work, to its array of programs in the Gulf supporting natural resource management and community assistance. [redacted] be closely coordinated within NOAA and with other Agencies and wi[redacted] benefit to Gulf of Mexico coastal and offshore habitats and resources.

Organization

Concurrent with NOAA's focus on the massive re[redacted] and recovery have been evolving through support to CEQ. NO[redacted] us on the Long Term Restoration effort, through identification o[redacted] ough the NRDA Trustee Steering Committee. Response efforts h[redacted] ugh significant Line Office involvement. Strategy development f[redacted] d on an 'on-demand' basis with NOAA leadership engag[redacted] Framework. NOAA now needs to consider how best to organiz[redacted] overy and restoration efforts to maximize resource benfits. As work [redacted] es will be stood down, while others need to be ramped up to suppo[redacted] alth and safety, and ecological recovery o[redacted]

In addition to expansi[redacted] be considered:

- Comprehensi[redacted] tation
- [redacted]
- [redacted] ation, and adaptive management;
- [redacted] sistance and seafood marketing assistance;
- [redacted] inst natural disasters such as hurricanes and
- [redacted] Federal interagency permitting processes (e.g ESA, EFH, MMPA);
- [redacted] ent across-agencies, and with stakeholders and the public.

Both t[redacted] War Room and the coordination within the Region need to be consid[redacted]

Immediate action:

- Further define, and expand as appropriate, existing **Economic, Community Assistance** box.
    - Clarify and realign existing tasks to capture the needs of general DWH (e.g. fisheries, communities, etc) and specific NRDA issues.
    - Consider Economic and Community Assistance components of Long Term Gulf Restoration plan that NOAA can support and influence DOC participation on. One example would be to have a Fisheries person to lead a marketing sub-box.

- Create additional 'box' within the existing War Room structure to include **Long Term Gulf Restoration**
    - Once implemented this box should have abroad definition and be flexible and responsive to evolving resource conditions and activities related to this effort.
    - Early actions of the box would be to address:
        - Create a structure similar to the Science box,
        - Ensure that the activities are closely coordinated with other relevant Teams s such as NRDA, Science and Regional Coordination.
        - Establish clear data management and accountability standards
        - Develop an internal and external communications plan which clearly links and describes the relationship betwee[illegible]ons and the DWH NRDA restoration.
        - A prioritization strategy that artic[illegible]e and divergence of the DWH and Long Term[illegible]scribe resource linkages and funding limi[illegible]
        - Measures of success, eit[illegible]e articulated early in the process for p[illegible]tion.
    - Anticipated timeframe for creati[illegible]er, to immediately follow submission o[illegible]

Transition:

- As the magnitude of the respo[illegible]and the ICCs are consolidated,[illegible]o an overarching focus on **Long Term Re[illegible]** will require knowledge and experience co[illegible]ration, in addition to response.
- Response rem[illegible]f, but these War Room functions/box[illegible]rities shift..
- [illegible] re-direct their focus toward
- [illegible]overy should ~~be~~ include:
    - [illegible]Management
    - [illegible]ic engagement
    - [illegible]tion
- [illegible]vn or are consolidated there is a need for increased coordination with Regional restoration activities and other branches of NOAA which may support Long Term Recovery. NOAA already has staff with a broad range of expertise working on DWH in various locations throughout the Gulf, and consolidating Federal program expertise in a centralized location could be readily accomplished at the Disaster Response Center (AL), Stennis Space Center (MS), Wetlands Research Center (LA) or NMFS Regional Office (FL).
- Timing of this transition would likely be November/December, with the consolidation of the response.

Long Term:

Pre-decisional; deliberative; do not distribute

- Transition to long term regional program and operations.
- Informed by Ocean Policy discussions, Mabus plan, congressional action.
- Evaluate resource needs and gaps.
- Status of FY12 request.



Received(Date): Wed, 01 Sep 2010 09:21:43 -0400
From: "Melissa.Andersen" <Melissa.Andersen@noaa.gov>
Subject: Re: War room question
To: John Rapp <John.Rapp@noaa.gov>
FINAL NOAA (Westerholm) Dispersant testimony Senate EPW 080410.doc

Hi John-
Thanks for the input. I'll add that these actually came to me from F. I then forwarded them to war room staff as an FYI. The email came from Katie Nichols in F and Chris Rilling responded that he'd suggested to Katie that I be the best person to answer since they were questions from Westerholm's testimony. Katie/Chris forwarded me the complete list of questions from the Senate (attached) and indicated that the 4 questions below were assigned to NMFS and all the rest assigned to NOS. Since Chris sent them to me, if seems a little strange to go right back to him with them. Thoughts?

Melissa

John Rapp wrote:
> I was going to touch base with you today to see how things were going,
> so this is good something popped up. I would check the Sharepoint
> site first to see what's in there even if they're not answers to QFR's
> because you'd likely be able to cobble something together. Don't just
> limit your search to the LMR folders. The questions below actually
> look like questions NOS may have answered because the Emergency
> Response Division (led by Bill Conner) is the group weighing in on
> trade-offs through the Regional Response Team structure. I'd also
> look in Science box folders because Murawski has has a lot of input on
> toxicity.
>
> Before sending it on, I recommend working with the response/NRDA and
> Science boxes to see if the questions should be split up. As I noted
> above, these aren't really NMFS type questions given the history of
> the spill.
>
> If it's not in Sharepoint, and you all agree NMFS is the best group to
> answer these, then the next step is sending it to F but note a couple
> things in the request:
>
> 1. Who you think (if you have a hunch) the best person/group is to
> answer the question,
> 2. deadline with plenty of wiggle room, and
> 3. an indication of how much of the compiling you're willing to do.
>
> I mention the deadline because I've found that F will go right up, and
> most likely past, whatever deadline you give them. So, save yourself
> some gray hair and really back your timeline up. Second, your almost
> always going to have to tweak a product after it leaves F, so let them
> know that you're willing to compile the information that comes in and
> then pass it back through F for final approval before it moves forward.
>
> One last person/group to contact is OLA. Since these questions came
> from Westerholm's testimony, be 100% sure that someone in that shop
> isn't already working these through another channel.
>
> I hope that helps. Give me a call if you want to discuss a bit more.
>

> John
>
> Melissa.Andersen wrote:
>> Hi John-
>> Thought you got off easy with no taskers on Monday, right? It has
>> been pretty slow, but I finally got my first assignment yesterday. If
>> you have a minute, I have one multi-layered question. I'm not passing
>> the buck or asking you to help me answer! But I would like your
>> advise on the process you'd undertake to finish the task...What would
>> be your first step in finding answers to questions that come in?
>> Would you first go through the sharepoint or SERO/NOAA DWH/sharepoint
>> websites to see if the information is there? Or would you first
>> contact folks in the region? Or since these questions were a result
>> of Westerholm's testimony, would you go to the contact that assisted
>> in drafting the testimony?
>>
>> If you would contact a person first, I'd definitely welcome your
>> advice on who to contact for the questions below (I'll also be
>> working with Chris Rilling on these)!
>>
>> 1) How does NOAA assess the tradeoffs if the effects on wildlife and
>> fish in the water column are unknown?
>> 2) Has NOAA conducted or found that others have perfomred acute and
>> sublethal toxicity tests involving dispersants and dispersant-oil
>> mixtures on key organisms in the gulf?
>> 3) Could the oil still in the water column be toxic to fish and
>> wildlife in the gulf?
>> 4) Has NOAA seen any evidence of dispersants bioaccumulation in any
>> species in the Gulf?
>>
>> Thanks John!
>> Melissa
>>

--
Melissa Andersen
Office of Protected Resources
National Marine Fisheries Service
National Oceanic & Atmospheric Administration

on detail to:

NOAA's Deepwater Horizon Team
Living Marine Resources Contact
Herbert C. Hoover Commerce Building, Room #5215
1401 Constitution Avenue NW
Washington DC 20230
b7(C) personal infor B6 Privacy nt rec

[redacted]

MAX BAUCUS, MONTANA
THOMAS R. CARPER, DELAWARE
FRANK R. LAUTENBERG, NEW JERSEY
BENJAMIN L. CARDIN, MARYLAND
BERNARD SANDERS, VERMONT
AMY KLOBUCHAR, MINNESOTA
SHELDON WHITEHOUSE, RHODE ISLAND
TOM UDALL, NEW MEXICO
JEFF MERKLEY, OREGON
KIRSTEN GILLIBRAND, NEW YORK
ARLEN SPECTER, PENNSYLVANIA

JAMES M. INHOFE, OKLAHOMA
GEORGE V. VOINOVICH, OHIO
DAVID VITTER, LOUISIANA
JOHN BARRASSO, WYOMING
MIKE CRAPO, IDAHO
CHRISTOPHER S. BOND, MISSOURI
LAMAR ALEXANDER, TENNESSEE

BETTINA POIRIER, *STAFF DIRECTOR*
RUTH VAN MARK, *MINORITY STAFF DIRECTOR*

United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510–6175

August 30, 2010

Mr. David Westerholm
Director
Office of Response and Restoration
National Oceanic and Atmospheric Administration
1305 East West Highway
Silver Spring, MD 20910

Dear Mr. Westerholm:

Thank you for appearing before the Committee on Environment and Public Works on August 4, 2010. We appreciate your testimony, and we know that your input will prove valuable as we continue our work on this important topic.

Enclosed are questions that have been submitted by Senators Boxer, Sanders, Gillibrand and Inhofe for the hearing record. Please submit your answers to these questions by COB September 13, 2010 to the attention of Heather Majors, Senate Committee on Environment and Public Works, 410 Dirksen Senate Office Building, Washington, D.C. 20510. In addition, please provide the Committee with a copy of your answers via electronic mail to Heather_Majors@epw.senate.gov. To facilitate the publication of the record, please reproduce the questions with your responses.

Again, thank you for your assistance. Please contact Grant Cope of the Majority Staff at (202) 224-8832, or Dimitri Karakitsos of the Minority Staff at (202) 224-6176 with any questions you may have. We look forward to reviewing your answers.

Sincerely,

[redacted]
Barbara Boxer
Chairman

James M. Inhofe
Ranking Member

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Document ID: 0.7.19.1347

BARBARA BOXER, CALIFORNIA, *CHAIRMAN*

MAX BAUCUS, MONTANA
THOMAS R. CARPER, DELAWARE
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Sincerely,

Barbara Boxer
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Environment and Public Works Committee Hearing
August 4, 2010
Follow-Up Questions for Written Submission

Questions for Westerholm

Questions from:

Senator Barbara Boxer

1. Director Westerholm, your testimony states that NOAA has a Scientific Team that "provides a broad array of scientific services to the response, including recommendations to the [Federal On-Scene Coordinator] on the appropriate use of dispersants" in gulf oil spill response activities.

Could you please describe the types of recommendations that NOAA has made on the use of dispersants in the gulf, and any tests that NOAA relied on for those recommendations?

2. Director Westerholm, you have testified that "[t]he use of dispersants is an environmental trade-off between impacts within the water column, on the sea surface (bird, mammals, and turtles in slicks) and on the shore."

You have also testified that "the effects of dispersants and dispersed oil below the surface on wildlife such as diving birds, marine mammals, and sea turtles are unknown."

How does NOAA assess the tradeoffs if the effects on wildlife and fish in the water column are unknown?

3. Director Westerholm, the National Academy of Sciences in 2005 said that "a particular concern [with the use of dispersants] stems from potential synergistic effects of exposure to dissolved components in combination with chemically dispersed oil droplets." The NAS recommended that federal agencies and other stakeholders "develop and fund a series of focused toxicity studies to determine the mechanisms of both acute and sublethal toxicity to key organisms from exposure to dispersed oil."

Has NOAA conducted or found that others have performed acute and sublethal toxicity tests involving dispersants and dispersant-oil mixtures on key organisms in the gulf?

4. Director Westerholm, the National Incident Command released a report titled: "BP Deepwater Horizon Oil Budget: What Happened To the Oil?" I'd like you to clarify some numbers in this report.

Of the estimated 4.9 million barrels of oil spilled, does the report find that 24% of the oil was naturally or chemically dispersed into the water column, and that an additional 26% of the oil remains in the water column?

How much oil in any form remains in the water column?

5. Director Westerholm, I have another question on the NIC report.

Document ID: 0.7.19.1347.1

The report states: "All of the naturally dispersed oil and some of the oil that was chemically dispersed remained well-below the surface in diffuse clouds where it began to dissipate further and biodegrade...Until it is biodegraded, naturally or chemically dispersed oil, even in dilute amounts, can be toxic to vulnerable species..."

Could the oil still in the water column be toxic to fish and wildlife in the gulf?

Senator Bernard Sanders

1. You mentioned there are no data on toxicity of dispersed oil to deep-sea biota at any life stage. How were initial test results on Gulf of Mexico dispersants obtained? In other words, were these tests conducted at the wellhead so that depth, pressure, and temperature variables were accurate?

Senator Kirsten E. Gillibrand

Water Samples and Biodegradation of Dispersants

According to data obtained from Unified Command, application of Corexit 9527, which contains a potentially hazardous ingredient, 2-butoxyethanol, was stopped on May 22nd. Though application was stopped, water sampling results posted on EPA's website and collected along the shoreline of the Gulf Coast indicate the presence of 2-butoxyethanol on July 8th, 47 days after the last known application.

QUESTION: Has NOAA investigated the potential source the 2-butoxyethanol? Is there evidence to correlate the presence of 2-butoxyethanol with the application of Corexit 9527? If so, does this mean that this dispersant is more persistent in the environment than initially expected? If not, what other sources may account for the presence of 2-butoxyethanol in the samples?

Dispersant effectiveness on fresh versus weathered oil

Throughout the response, federal authorities have proposed that oil takes about 3 hours to travel from the subsurface to surface. On at the surface, federal authorities have said that it take about 5 hours for oil to weather.

QUESTION: A number of BP's expemptions for surface/subsurface use seemed to rely on the identification of oil plumes a day to a week in advance. As a result, exemption request were submitted anywhere from a day to a week in advance. If the time windows proposed by federal authorizations for oil weatherization are correct, it appears that dispersants were applied to weathered oil where the effectiveness had drastically decreased. What have we learned about the effectiveness of dispersants at breaking up weathered oil?

Senator James M. Inhofe

1. From your vantage point, is it fair to say that federal agencies took into account potential damages from dispersants and came to the conclusion that any negative effects from their use would more than likely outweigh those of oil spewing into the Gulf?

2. Judging from the current reports that dispersants have been successful in the Gulf, with no discernable concomitant environmental damage, would you support a moratorium on the use of dispersants for further study should we need them again in the near future?

3. A recent St. Petersburg Times article reported that members of the University of South Florida scientific community as well as an oceanographer from the University of Southern Mississippi questioned certain NOAA data and claimed that when they presented their findings they were "lambasted", "basically called inept idiots" and attempts were made to discredit them. Can you speak to the scientific nature of the USF and USM findings and can you address the claims of NOAA's reaction to their findings?

4. Has NOAA seen any evidence of dispersants bioaccumulation in any species in the Gulf?

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WRITTEN STATEMENT OF
DAVID WESTERHOLM
DIRECTOR, OFFICE OF RESPONSE AND RESTORATION
NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

HEARING ON
THE USE OF DISPERSANT FOR THE DEEPWATER HORIZON BP OIL SPILL

BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

August 4, 2010

Thank you, Chairman Boxer and Members of the Committee, for the opportunity to testify on the Department of Commerce's National Oceanic and Atmospheric Administration's (NOAA) role in the Deepwater Horizon BP oil spill response and the use of dispersants. My name is David Westerholm and I am the Director of NOAA's Office of Response and Restoration. I appreciate the opportunity to discuss the critical roles NOAA serves during oil spills and the importance of our contributions to protect and restore the natural resources, communities, and economies affected by this tragic event.

NOAA's mission is to understand and predict changes in the Earth's environment. NOAA also conserves and manages coastal and marine resources to meet our Nation's economic, social, and environmental needs. As a natural resource trustee, NOAA is one of the federal agencies responsible for protecting, assessing, and restoring the public's coastal natural resources when they are harmed by oil spills. As such, the entire agency is deeply concerned about the immediate and long-term environmental, economic, and social impacts to the Gulf Coast and the Nation from this spill. NOAA is fully mobilized and working tirelessly to reduce impacts on the Gulf Coast and will continue to do so until the spill is controlled, oil is cleaned up, natural resource injuries are assessed, and restoration is complete.

My testimony today will discuss NOAA's role in the Deepwater Horizon response and natural resource damage assessment process associated with the Deepwater Horizon oil spill, for which BP is a responsible party; NOAA's role in use of dispersants as a countermeasure to mitigate the impacts of the spill; and opportunities to strengthen the federal response to future events through research and development.

NOAA'S ROLES DURING OIL SPILLS

NOAA has three critical roles mandated by the Oil Pollution Act of 1990 and the National Contingency Plan (NCP):

1. During the emergency response, NOAA conducts research and monitoring and communicates scientific information to the Federal On-Scene Coordinator (FOSC). The Scientific Support Team is designated as a special team in the NCP and provides a broad array of scientific services to aid the response.
2. As a natural resource trustee, NOAA conducts a Natural Resource Damage Assessment

Document ID: 0.7.19.1347.2

(NRDA) jointly with co-trustees to assess and restore natural resources injured by the oil spill. NRDA also assesses the lost uses of those resources, such as recreational fishing, and swimming, with the goal of implementing restoration projects to address these losses.

3. Finally, NOAA represents the Department of Commerce in spill response preparedness and decision-making activities through the National Response Team and the Regional Response Teams.

Response

The U.S. Coast Guard (USCG) is the FOSC and has the primary responsibility for managing coastal oil spill response and clean-up activities in the coastal zone. During an oil spill, NOAA's Scientific Support Coordinators deliver technical and scientific support to the USCG. NOAA's Scientific Support Coordinators are located around the country in USCG Districts, ready to respond around the clock to any emergencies involving the release of oil or hazardous substances into the oceans or atmosphere. Currently, NOAA has deployed all of its Scientific Support Coordinators from throughout the country to work on the Deepwater Horizon BP oil spill.

With over thirty years of experience and using state-of-the-art technology, NOAA continues to serve the Nation by providing its expertise and a suite of products and services critical for making science-based decisions. Examples include trajectory forecasts on the movement and behavior of spilled oil, overflight observations, spot weather forecasts, emergency coastal survey and charting capabilities, aerial and satellite imagery, and real-time coastal ocean observation data. Federal, state, and local entities look to NOAA for assistance, experience, local perspective, and scientific knowledge. NOAA's Office of Response and Restoration was called upon for scientific support 200 times in 2009.

Natural Resource Damage Assessment

Stewardship of the Nation's natural resources is shared among several federal agencies, states, and tribal trustees. NOAA, acting on behalf of the Secretary of Commerce, is the lead federal trustee for many of the Nation's coastal and marine resources, and is authorized by the Oil Pollution Act of 1990 (OPA) to recover damages on behalf of the public for injuries to trust resources resulting from an oil spill. Regulations promulgated by NOAA under the Oil Pollution Act encourage compensation in the form of restoration of the injured resources, and appropriate compensation is determined through the NRDA process. Since the enactment of OPA, NOAA, together with other federal, state, and tribal co-trustees, has recovered approximately $500 million for restoration of natural resources injured by releases of oil or hazardous substances, as well as injuries to national marine sanctuary resources, including vessel groundings.

National and Regional Response Teams

The National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the NCP, is the federal government's blueprint for responding to both oil spills and hazardous substance releases. The NCP's purpose is to develop a national response capability and promote overall coordination among the hierarchy of responders and contingency plans. NOAA represents the Department of Commerce on the National Response Team and Regional Response Teams which develops policies on dispersant use, best clean-up practices and communications, and to ensure access to science-related resources, data, and expertise during responses to oil spills.

NOAA'S ROLE IN THE DEEPWATER HORIZON RESPONSE

NOAA's scientific experts have been assisting with the response from the first day of the

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Deepwater Horizon BP oil spill, both on-scene and through our headquarters and regional offices. NOAA's support includes daily trajectories of the spilled oil, weather data to support short and long range forecasts, and hourly localized 'spot' forecasts to determine the use of weather dependent mitigation techniques such as oil burns and chemical dispersant applications. NOAA uses satellite imagery and real-time observational data on the tides and currents to predict and verify oil spill location and movement. To ensure the safety of fishermen and consumer seafood safety, NOAA scientists are in the spill area taking water and seafood samples, and NOAA has put fisheries closures in place to maintain consumer confidence in the safety of consuming seafood from the Gulf of Mexico region. In addition, NOAA experts are providing expertise and assistance regarding sea turtles, marine mammals, and other protected resources such as corals.

At the onset of this oil spill, NOAA quickly mobilized staff from its Damage Assessment Remediation and Restoration Program to begin coordinating with federal and state co-trustees and the responsible parties to collect a variety of data that are critical to help inform the NRDA. NOAA is coordinating the NRDA effort with the Department of the Interior (another federal co-trustee), as well as co-trustees in five states and representatives for at least one responsible party, BP. NOAA and the co-trustees are in the initial phase of this process and are currently gathering data on resources such as fish, shellfish, birds, and turtles, and mammals; their supporting habitats such as wetlands, beaches, and corals; and human uses of affected resources, such as fishing and recreational uses across the Gulf of Mexico. The trustees will then quantify the total losses and develop restoration projects that compensate the public for their losses.

THE USE OF DISPERSANTS

The Deepwater Horizon BP oil spill is a stark reminder that large oil spills still occur, and that we must rebuild and maintain our response capacity. When an oil spill occurs, there are no good outcomes. Once oil has spilled, responders use a variety of oil spill countermeasures to reduce the adverse effects of spilled oil on the environment. The goal of the Unified Command is to minimize the environmental damage and speed recovery of injured resources. The overall response strategy to accomplish this goal is to maximize recovery and removal of the oil being released while minimizing any collateral damage that might be caused by the response itself. This philosophy involves making difficult decisions, often seeking the best way forward among imperfect options.

Under section 311 of the Clean Water Act, the U.S. Environmental Protection Agency (EPA) is required to prepare and maintain a schedule of dispersants and other mitigating devices and substances that may be used in carrying out the NCP. The NCP requires Regional Response Teams (RRT), in which NOAA participates, and Area Committees to plan in the advance of spills for the use or non-use of dispersants, to ensure that the tradeoff decisions between water column and surface/shoreline impacts are deliberated. As the FOSC for this spill response, the U.S. Coast Guard is responsible for approving the use of the specific dispersant used from the NCP Product Schedule. Because of the unprecedented nature of the dispersant operations, the monitoring and constraints on application volumes and methodologies are being closely managed. In particular, EPA has specified effectiveness and impact monitoring plans, application parameters, and action thresholds. Any changes to specific Deepwater Horizon dispersant plans require the concurrence of EPA and other RRT decision agencies, including NOAA, under the NCP.

NOAA's Scientific Support Team is designated as a special team in the NCP and provides a

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broad array of scientific services to the response, including recommendations to the FOSC on the appropriate use of dispersants. NOAA is also a member of the Special Monitoring of Applied Response Technologies (SMART) program, an interagency, cooperatively designed program to monitor the efficacy of dispersant and *in situ* burning operations. SMART relies on small, highly mobile teams that collect real-time data using portable, rugged, and easy-to-use instruments during dispersant and *in situ* burning operations. Data are channeled to the Unified Command to help address critical questions. NOAA also uses SMART data to inform 24, 48 and 72 hour oil fate and trajectory models as dispersants can augment the behavior of the spilled oil.

The Gulf of Mexico shorelines, and Louisiana's in particular, possess extensive marsh habitats that are critical for wildlife and fisheries and shoreline protection. NOAA's environmental sensitivity index maps rank shoreline vulnerability to oil spills, and marshes are considered the most sensitive. Louisiana's marshes are already in a weakened condition and large areas are lost every year. These marshes and biota are extremely sensitive to oil, very difficult to clean up, and highly vulnerable to collateral impacts from response efforts.

For the Deepwater Horizon BP oil spill, the Unified Command's response posture has been to fight the spill offshore and reduce the amount of oil that comes ashore, using a variety of countermeasures including subsurface recovery, booming, skimming, burning, and dispersants. No single response method is 100 percent effective, and each has its own "window of opportunity" defined by the density and state of the oil and weather and sea state conditions, thereby establishing a need to consider the use of all available methods. Given the size and complexity of the Deepwater Horizon BP oil spill, no combination of response actions can fully contain the oil or completely mitigate the impacts until the well is brought under control. But given the enormous volume and geographic extent of the spill, the response to date has been successful in limiting shoreline impacts.

Chemical dispersants can be an effective tool in the response strategy, but like all methods, involve trade-offs in terms of effectiveness and potential for collateral impacts. Although mechanical recovery using skimmers is the preferred method of offshore oil spill response because it removes the oil from the environment, it is generally ineffective unless seas are fairly calm. The use of dispersants to mitigate offshore oil spills is a proven and accepted technology to reduce the impacts to shorelines and, under certain conditions, can be more effective than mechanical response. This is largely due to the fact that spray aircraft can encounter much more of the floating oil, and more quickly, than can skimmers Dispersants have been used effectively to respond to spills both in the U.S. and internationally. In the U.S., notably in the Gulf of Mexico, dispersants have been used during the past 15 years against much smaller spills off Louisiana and Texas. The largest use of dispersants in North America (2.7 million gallons) was in the Gulf of Mexico during the 1979-80 Ixtoc I blowout in Campeche Bay, Mexico. The Deepwater Horizon BP oil spill response used about 1.8 million gallons of dispersant.

The NCP establishes a framework for the use of dispersants in an oil spill response. The NCP states that RRT and Area Committees will address, as part of their planning activities, the desirability of using dispersants and oil spill control agents listed on the NCP's National Product Schedule. The NCP goes on to state that Area Contingency Plans (ACP) will include applicable pre-authorization plans and address the specific contexts in which such products should and should not be used. If the RRT representatives for EPA, the Department of Commerce, and Department of the Interior natural resource trustees, and the states with jurisdiction over the

Document ID: 0.7.19.1347.2

regional waters for which the preauthorization plan applies, approve in advance the use of certain dispersant products under specified circumstances as described in the preauthorization plan, the FOSC may authorize the use of the products without obtaining additional concurrences. In Region VI, which includes the Gulf of Mexico, dispersant use is pre-authorized in offshore water, beyond the 3-mile limit. The preauthorization of alternative countermeasures in the response plans allows for quick implementation of the pre-approved countermeasures during a response, when timely action is critical to mitigate environmental impacts.

For all dispersant operations, the FOSC must activate the SMART monitoring team to monitor the effectiveness of the dispersant. Dispersant use for the Deepwater Horizon BP oil spill was performed in accordance with ACP guidelines and with RRT approval. In consideration of the size and duration of the oil spill, the amounts of dispersant being used, and the uncommon sea bed injection method of application, a directive was approved by EPA and state representatives for the Region 6 Regional Response Team to put specific restrictions and monitoring requirements in place concerning dispersant use for the Deepwater Horizon BP oil spill as a condition of FOSC authorization for use. NOAA's Scientific Support Coordinators, supported by NOAA's team of scientists and in consultation with trustees, is advising the FOSC on when and where dispersants should be used to determine the most effective and appropriate use of dispersants.

Dispersants are chemicals that may be applied directly to the spilled oil in order to remove it from the water surface by dispersing it into the upper layer of the water column. Dispersants are commonly applied through specialized equipment mounted on an airplane, helicopter or ship. The dispersant must be applied as a mist of fine droplets and under a specific range of wind and sea state conditions. Once applied at the surface, dispersants help break up the oil into tiny droplets (20-100 microns across; a micron is the size of the cross section of a hair) which mix into the upper layer of the ocean. Because of the high encounter rate of aircraft, they allow for the rapid treatment of large areas. Dispersed oil does not sink; rather it forms a "plume" or "cloud" of oil droplets just below the water surface. The dispersed oil mixes vertically and horizontally into the water column and is diluted. Once formed, bacteria and other microscopic organisms then act to degrade the oil within the droplets more quickly than if the oil had not been chemically dispersed. It should be noted that oil spilled from the Deepwater Horizon BP oil spill is also naturally dispersing into the water column due to the physical agitation of the wind, waves, and vessel operations.

During the first few months of the Deepwater Horizon BP oil spill, subsurface dispersants were applied directly at the wellhead where oil was being released through the use of Remotely Operated Vehicles (ROV). The decision to use subsurface applications was made by the FOSC with concurrence by RRT Region VI after several test applications to determine the efficacy, and development and implementation of a monitoring protocol. Monitored levels of dissolved oxygen levels within the dispersed oil plume and rotifer toxicity test results were reviewed daily to determine whether changes in the sea bed injection protocol should be considered. While there has been virtually no dispersant use since the well was capped on July 15, BP is continuing its environmental monitoring, under an EPA directive.

Spill response often involves a series of environmental trade-offs. The overall goal is to use the response tools and techniques that will minimize the overall environmental damage from the oil. The use of dispersants is an environmental trade-off between impacts within the water column, on the sea surface (birds, mammals, and turtles in slicks) and on the shore. Dispersants do not

Document ID: 0.7.19.1347.2

remove the oil from the environment, but it does speed up biodegradation of the oil. When a decision is made to use dispersants, the decision maker is reducing the amount of oil on the surface where it may affect birds, mammals and turtles, when they are at or near the surface, and ultimately that oil that may come ashore, in exchange for increasing the amount of oil in the upper layer of the water column 40 miles off shore. While the effects of dispersants on some water column biota have been studied, the effects of dispersants and dispersed oil below the surface on wildlife such as diving birds, marine mammals, and sea turtles are unknown. Under ideal conditions, each gallon of dispersant applied offshore prevents about 20 gallons of oil from coming onto the beaches and into the marshes of the Gulf Coast.

The Gulf coast is home to coastal wetlands and marshes that are biologically productive and ecologically important to nesting waterfowl, sea turtles, fisheries, and essential fish habitat. The Gulf of Mexico region's ecological communities are essential to sustaining local economies, recreational experiences, and overall quality of life. The extensive marshes themselves provide coastal communities with protection from severe storms, such as Hurricane Katrina. These habitats are highly sensitive to oiling. Once oil does impact marshes, there are limited cleanup options, and potential for significant long-term impacts. As oil has moved ashore from the Louisiana coast to the Florida panhandle from the Deepwater Horizon BP oil spill, we have seen firsthand the impacts this oil has on these habitats, and to birds, turtles and other wildlife. Although it may not be readily apparent, use of dispersants offshore and in deep water, is reducing the amount of oil reaching the shoreline, reducing the amount of shoreline cleanup that will be required, and helping to reduce recovery time of injured nearshore resources. Without the use of dispersants, the shoreline impacts along the Gulf coast from the Deepwater Horizon BP oil spill would be greater.

RESEARCH ON THE EFFECTIVENESS AND EFFECTS OF DISPERSANTS AND DISPERSED OIL

Research on the effectiveness and effects of dispersants and dispersed oil has been underway for more than three decades. Much of what we have learned from both research and real world experience is presented in detail in the 2005 National Research Council (NRC) report "Oil Spill Dispersants: Efficacy and Effects." The NRC identified gaps in our knowledge. Gaps in oil spill knowledge were narrowed by research and development activities carried out through projects conducted by the Coastal Response Research Center (CRRC), and state and federal agencies, and academia. The CRRC was a successful joint partnership established in 2004 between the University of New Hampshire and NOAA's Office of Response and Restoration.

One area of focus has been on determining the toxicity and effects of dispersants and dispersed oil on sensitive marine life. It is now quite clear that effectively-dispersed oil declines rapidly in concentration due to ocean mixing, degrades faster than untreated surface or shoreline oil, and that the toxicity of dispersants is considerably less than the toxicity of the oil that is dispersed. The acute (four day) toxicity of dispersants and dispersed oil for the most sensitive species and life stages of fish and crustaceans occurs at concentrations in the low part per million (ppm) range (data compiled from NAS 2005: Oil Spill Dispersants: Efficacy and Effects). Despite this general statement, reports exist of more sensitive life stages and species. For example, effects on fertilization and metamorphosis of coral larvae are reported at sub-part per million concentrations (e.g., Negri and Heyward (2000), Marine Pollution Bulletin 41(7-12): 420-427). Very little is known about the species found in the deep ocean near the Deepwater Horizon BP oil spill release site or the susceptibility of these species to dispersed oil toxicity at cold temperatures and high pressures.

Document ID: 0.7.19.1347.2

On June 30, 2010, the EPA released its initial test results on the toxicities of eight different dispersants on silverside fish and small crustacean species in an early life stage. The primary purpose of these studies was to determine the toxicity differences among different dispersant products. Corexit 9500, the main product used in the Deepwater Horizon BP oil spill response, was found to be "slightly toxic" for one test species and "practically non-toxic" for the other. LC50 concentrations, the concentration at which half the test organisms died, were 42ppm and 130ppm respectively.

The effects of the dispersed oil on marine life depend on concentration and duration of exposure of organisms to the dispersed oil. At the sea surface, early life stages (eggs and larvae) of fish and shellfish are much more sensitive than juveniles or adults to dispersants and dispersed oil. This increased sensitivity coupled with the fact that these organisms reside just below the surface of the ocean (as do plankton, zooplankton) where concentrations of the dispersed oil were initially highest, may have had a greater impact on these organisms. There are no data on the toxicity of dispersed oil to deep-sea biota at any life stage, so we have to extrapolate based on existing knowledge of other aquatic species. However, in both regions (surface and deepwater), some modeling and monitoring is showing that dispersed oil concentrations may decline rapidly with distance from the well head as the “clouds” or “plumes” mix with sea water and move with the currents away from the treatment areas.

NOAA’s National Marine Fisheries Service laboratories in Seattle, Washington have been conducting chemical analysis of seafood collected in the aftermath of the Deepwater Horizon BP oil spill. Seafood samples, consisting of finfish, shrimp, and oysters are analyzed to measure uptake of polycyclic aromatic hydrocarbons (PAH) present in oil by marine species. To date, none of the seafood samples analyzed have PAH concentrations that exceed EPA and Food and Drug Administration guidelines, ensuring seafood reaching marketplace is safe to eat. NOAA also has expertise in determining the effects from exposure to oil on fish. The research shows that early life stages of fish are sensitive to the predominant PAHs in oil.

While numerous studies have been conducted on the fate and transport of oil dispersed on the surface, the fate and transport of oil dispersed at depth is less understood. While the application of dispersants into a subsurface plume had never been studied prior to the Deepwater Horizon BP oil spill, we expect the result to be similar to that of surface dispersant application, and thus result in even smaller droplets of oil in the plume. These very small droplets (100 microns) will rise extremely slowly while being mixed by background turbulence, so that they stay at depth, moving with the currents, until biodegraded, consumed by naturally occurring micro-organisms, or adhere to sinking sediment. An open scientific question for DWH is the effects of physical processes versus chemical dispersant in creating small droplets of oil seen around the wellhead.

Another major activity involving marine resource trustees has been a series of nearly 20 Consensus Ecological Risk Assessment (C-ERA) Workshops which were held all around the U.S. and adjacent international coastlines. These workshops, many lasting one week or more and sponsored by the U.S. Coast Guard, EPA and Department of the Interior, focused the attention of trustees of alternative response scenarios of large spills, including no response, on-water mechanical removal, *in situ* burning, dispersant use and shoreline clean up. Trustees evaluated the impacts and benefits of each realistic response option to their trust resources (marshes, shorelines, mammals, birds, fish, etc.) and then had to work on reaching consensus regarding the least damaging mix of response options for their specific area. The results of these workshops

Document ID: 0.7.19.1347.2

have provided valuable information for revising response plans in a number of states and countries.

ACTIVITIES TO ASSESS PRESENCE OF SUBSURFACE OIL FROM DEEPWATER HORIZON SPILL

Since the beginning of May, NOAA has been conducting and coordinating sampling of the sub-surface region around the Deepwater Horizon well-head and beyond to characterize the presence of subsurface oil. The sub-surface search involves the use of sonar, UV instruments called fluorometers, which can detect the presence of oil and other biological compounds, and collection of water samples from discrete depths using a series of bottles that can be closed around a discrete water sample.

NOAA, federal partners, academics, and others in the research community have mobilized to research and quantify the location and concentration of subsurface oil from the spill. NOAA Ships *Gordon Gunter, Thomas Jefferson, Henry Bigelow, Nancy Foster,* and *Delaware II* have conducted missions to collect water samples from areas near the wellhead as well as further from the wellhead and in the coastal zone. Water samples from many of these missions are still being analyzed and additional missions are in progress or being planned to continue the comprehensive effort to define the presence of oil below the surface and understand its impacts.

Water samples taken by researchers on the *R/V Pelican, R/V Walton,* and the *R/V Weatherbird II* have also been analyzed for the presence of subsurface oil. These samples from the R/V *Weatherbird* II confirmed low concentrations of surface oil from the Deepwater Horizon BP oil spill 40 nautical miles northeast of the wellhead. Additionally, hydrocarbons were found in samples 45 nautical miles northeast of the wellhead-at the surface, at 50 meters, and at 400 meters-however, the concentrations were too low to confirm the source, and work continues on these samples.

In accordance with FOSC and EPA requirements for the use of subsurface dispersants, BP contracted ships, *R/V Brooks McCall* and the *R/V Ocean Veritas*, have been collecting water samples in the area close to the wellhead since May 8, 2010 and continue to do so. Samples collected to date confirm the existence of a cloud of diffuse oil at depths of 3,300 to 4,600 feet near the wellhead. Initial total petroleum hydrocarbon (TPH) concentrations in the cloud at these depths, during active flow, ranged from 1000-8000 parts per billion (ppb). Post-flow concentrations have declined to less than 100 ppb and are being measured as far as 50 kilometers from the source. Analysis shows the concentration of this cloud generally decreases with distance from the wellhead. Decreased droplet size is consistent with chemically-dispersed oil. Dissolved oxygen levels in the water column are largely what are expected compared with historical data.

The Unified Command has established an inter-agency Joint Analysis Group (JAG) to aggregate and analyze all the relevant data from the many subsurface oil missions in order to have a comprehensive picture of the situation. This group is made up of federal scientists from NOAA, EPA and the Office of Science and Technology Policy. The JAG has issued two major reports on subsurface oil and continues to synthesize data from field sampling and modeling.

CONCLUSION

As the response to this oil spill continues, the Unified Command will continually reevaluate our

Document ID: 0.7.19.1347.2

response strategies, actions, and planning. NOAA will continue to provide scientific support to the Unified Command and continue our coordination with our federal and state co-trustees on the NRDA. I would like to assure you that we will not relent in our efforts to protect the livelihoods of Gulf Coast residents and mitigate the environmental impacts of this spill. In conjunction with the other federal agencies, we will continue to monitor the use of dispersants and as new information is generated we will appropriately advise the Unified Command. Thank you for allowing me to testify on NOAA's response efforts. I am happy to answer any questions you may have.

Document ID: 0.7.19.1347.2

Received(Date): Tue, 14 Sep 2010 09:23:52 -0400
From: Patrick Sweeney <Patrick.Sweeney@noaa.gov>
Subject: Re: FW: Help for james - urgent
To: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Cc: Frank Parker <Frank.Parker@noaa.gov>,Mridula Srinivasan <Mridula.Srinivasan@noaa.gov>,Danielle Tillman <Danielle.Tillman@noaa.gov>,"James.Chang@noaa.gov" <James.Chang@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>
Science_Workshops_Aug 30.xlsx

All,
Please see the attached list that I had when I left. I believe Mridula has the most up to date list as a few items were added when she took over.
v/r
-Patrick

Gabrielle Dreyfus said the following on 9/14/2010 9:18 AM:

> Frank, Danielle: what's the most recent version of the table that Patrick started? We need at least a brief description of the purpose of each of the meetings. Please send me a copy to review.
> James, here's background language on the JAG.
> Thanks!
> Gabby
>
> -----Original Message-----
> From: Margaret Spring [mailto:Margaret.Spring@noaa.gov]
> Sent: Tuesday, September 14, 2010 9:01 AM
> To: Gabrielle Dreyfus; 'cblackburn31@netscape.net'
> Cc: 'James.Chang@noaa.gov'
> Subject: Help for james - urgent
>
> Gabrielle and Chris,
>
> Could you please help james compile a list of all the external science meetings and outreach we have done on dwh (incluiding the dispersant workshop), from the OSTP meeting to the meeting at Dillard?
>
> If someone else has that info compiled please let James know.

--

LT(jg) Patrick Sweeney, NOAA

NOAA/NESDIS/STAR

Satellite Oceanography Climatology Division (SOCD)

World Weather Building, Room 601

5200 Auth Road, Camp Springs, MD 20746

B6 Privacy (O)

B6 Privacy (F)

Completed Workshops		
Date	**Title**	**Proponent**
30-Apr	Sea Grant	
7-May	Sea Grant	
7-May	Sea Grant	
10-May	Sea Grant	
11-May	Sea Grant	
12-May	Sea Grant	
12-May	Sea Grant	
17-May	Sea Grant	
18-May	Sea Grant	
22-May	Sea Grant	
24-May	Sea Grant	
25-May	Sea Grant	
26-May	DWH dispersant use meeting	NOAA/ORR an
26-May	Sea Grant	
27-May	Sea Grant	
1-Jun	Sea Grant	
2-Jun	Sea Grant	
2-Jun	Sea Grant	
3-Jun	LSU Science Symposium	NOAA, USGS, N
3-Jun	Sea Grant	
4-Jun	Sea Grant	
10-Jun	Sea Grant	
11-Jun	Sea Grant	
14-Jun	Sea Grant	
16-Jun	Sea Grant	
17-Jun	Sea Grant	
17-Jun	Sea Grant	
21-Jun	Sea Grant	
22-Jun	Sea Grant	
23-Jun	Sea Grant	
30-Jun	Marine mammal and turtle toxicology	LMR
1-Jul	Oil Spill Response Workshop	NOAA/AOML-S
1-Jul	Sea Grant	
13-Jul	Sea Grant	
14-Jul	Sea Grant	
14-Jul	Sea Grant	
15-Jul	Sea Grant	
20-Jul	Sea Grant	
23-Jul	Sea Grant	
23-Jul	Deep Water Exploration POC: Felipe Arzayus	OAR
27-Jul	Sea Grant	
27-Jul	Sea Grant	

28-Jul	Sea Grant	
29-Jul	Sea Grant	
29-Jul	Sea Grant	
2-Aug	Sea Grant	
3-Aug	Sea Grant	
8/4/2010	Sea Grant	
5-Aug	Sea Grant	
5-Aug	Sea Grant	
6-Aug	Sea Grant	
7-Aug	Sea Grant	
7-Aug	Sea Grant	
8/11/2010	Sea Grant	
17-Aug	Oral History Workshop	Social Science
8/18/2010	Sea Grant	
19-Aug	NIH-CDC Interagency Workin g Group-Human H	NIH/CDC led
23-Aug	LMR Workshop - Harvested Species I	LMR
8/25/2010	Sea Grant	
8/26/2010	Sea Grant	
8/27/2010	Sea Grant	
8/27/2010	Sea Grant	
31-Aug	Academic Listening Session FL	Science
1-Sep	Academic Listening Session MS	Science
9/1/2010	Sea Grant	
2-Sep	Academic Listening Session LA	Science

Description	State	City	Participants
Coastal and Marine Resource Agent was on hand and distributed t	LA	Venice, LA	100
Organized for area commercial fishermen to answer questions con	LA	St Bernard	200
Members of the Brownsville/Port Isabel Shrimp Producers Associat	LA	New Orlea	100
Presentation to County Commissioner's Court immediately prior to	AL	Mobile, Al	30
Representatives from state resource agencies, the National Oceani	MS	Ocean Spr	40
Community forum to help provide answers to the public's questior	AL	Mobile, Al	75
Community forum to help provide answers to the public's questior	FL	Cedar Key	25/week (13
Community forum to help provide answers to the public's questior	LA	Venice, LA	206
all media, officials from the Port of Port Arthur, local (city and coun	LA	New Orlea	200
forum to learn more information concerning the oil spill. Represen	LA	Houma, LA	100
forum to learn more information concerning the oil spill. Represen	TX	Port Isabe	60
Train volunteers in how to respond to and assist oiled wildlife	LA	Abbeville,	275
(1) Provide input to the affectedRegional Response Teams (RRTs) or			71
forum to learn more information concerning the oil spill. Represen	TX	Brownsvil	15
Discuss possible impacts of oil on Florida Keys	TX	Brownsvil	60
forum to learn more information concerning the oil spill. Represen	LA	Slidell, LA	100
The public is invited to this forum to learn more information conce	MS	Biloxi, MS	150
The public is invited to this expo to learn more information concer	AL	Mobile, Al	200
Interagency symposium sponsored by NOAA and convened by the	LA		200
The public is invited to this forum to learn more information conce	AL	Mobile, Al	200
The public is invited to this expo to learn more information concer	TX	Port Arthur	45
cadre of Texas leaders to help ensure effective understanding and	LA	Braithwaite	50
Train volunteers in how to respond to and assist oiled wildlife	LA	Houma, LA	50
Train community members to serve as peer listeners	FL	Franklin &	60
Train community members to serve as peer listeners	LA	Chalmette,	50
Business impacts and claims	FL	Marathon	15
Train community members to serve as peer listeners	LA	Baldwin, L	50
General Impacts	LA	Larose, LA	50
A meeting of the Alabama Working Waterfront Coalition to presen	LA	Lafitte, LA	50
Train community members to serve as peer listeners	LA	New Orlea	50
Marine mammal and turtle toxicology workshop in New Orleans			80
GOM monitoring in support of oil spill efforts (http://www.aoml.nc			81
General Impacts	LA	Houma, LA	50
Train community members to serve as peer listeners	TX	Bryan, TX	45
volunteer peer listeners	FL	Franklin &	50
Response and training for bird rescue (USFWS & FLFWS)	AL	Bayou LaB	44
volunteer peer listeners	MS	Ocean Spr	46
Fishermen (85% Vietnamese)	LA	Vermilion F	200
Intervention safety training for fishermen and seafood house	AL	Gulf Shore	39
Identify gaps in observations and data distribution of deep Ocean e	MD	Silver Sprin	61
Alabama Working Waterfront Coalition Meeting	LA	Mandeville	100
General Impacts	AL	Dauphin Isl	25

volunteer peer listeners	LA	Baton Rou	50
General Impacts	LA	Morgan Cit	100
volunteer peer listeners	LA	Baton Rou	40
Secretary Mabus Town Hall (SG serve as NOAA rep)	AL	Theodore,	75
Secretary Mabus Town Hall (SG serve as NOAA rep)	AL	Robertsda	75
Seafood Safety	FL	Apalachic	30
Secretary Mabus Town Hall (SG serve as NOAA rep)	LA	Houma, LA	
Secretary Mabus Town Hall (SG serve as NOAA rep)	LA	Buras, LA	
Injury Prevention & Education Workshop for fishers	LA	New Orlea	
Secretary Mabus Town Hall (SG serve as NOAA rep)	MS	Bay St. Lou	
Secretary Mabus Town Hall (SG serve as NOAA rep)	MS	Ocean Spr	
Seafood Safety Sensory Training Workshop	TX	Houston, T	25
Purpose of the workshop is to assemble and coordinate the researchers involved in oral h			7
Peer listener training	MS	Ocean Spr	8
Working group meeting			
Begin discussions on how to survey harvested species (and ecosyst	FL	Miami	22
Seafood Safety Sensory Training Workshop	TX	San Benito	16
HOW Program Training	MS	Biloxi, MS	50
HOW Program Training	AL	Mobile, A	25
Fisheries Dockside Chat, Bayou La Batre	AL	Bayou La	20
Sub-sea and sub-surface oil and dispersant detection draft plan	MS	Biloxi, MS	75

% External Participants
95%
95%
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95%

		Workshops in develop
Date	**Title**	**Proponent/ Th**
Dec-10	Social, Behavioral and Economic Effects of Oil S	Interagency
August-September '1	Restoration Planning - Texas	DARRP
August-September '1	Restoration Planning - Louisiana	DARRP
August-September '1	Restoration Planning - Mississippi	DARRP
August-September '1	Restoration Planning - Alabama	DARRP
August-September '1	Restoration Planning - Florida	DARRP
21-Sep	LMR Workshop - Harvested Species II	LMR Worksho
25-26 August	Workshop on survey design	LMR
31-Aug	Scientific Roundtable to Evaluate Use of Bioren	Sea Grant
5-6 OCT	JSOST PI Workshop	JSOST
OCT	Long Term Ecosystem Workship	NOAA/MABUS

ıment			
Description			
will include agency, NGO, and academics			
Receive restoration ideas and input for the public			
Receive restoration ideas and input for the public			
Receive restoration ideas and input for the public			
Receive restoration ideas and input for the public			
Receive restoration ideas and input for the public			
Continue discussions to modify or augment existing LMR surveys to	FL	St. Petersburg	
1st of 2 workshops to enhance fisheries-independent surveys, in co			
Bioremediation is one method of cleanup that uses the addition of			
PI Conference			

		Topics under consideration
Date	**Title**	**Proponent**
TBD, but soon	Sub-Surface Oil Transport	All themes
TBD, but soon	Standard and Protocol for Sample Collection	All themes
TBD, but soon	Follow on to Gulf Wide Monitoring Plan	All themes
TBD, but soon	Science and data needs for assessing spill impacts	LMR theme
TBD, somewhat later	What should a restored Gulf of Mexico look like?	All themes
TBD, somewhat later	Data Workshop	All themes
TBD, somewhat later	Second Data Workshop	All themes
TBD, somewhat later	Coastal Workshop	Coastal
TBD, somewhat later	Priorities Workshop	All themes
TBD, somewhat later	Social Scientist Workshop	All themes
TBD, somewhat later	Capacities workshop	All themes
TBD	Second Oceanography Workshop	Julien Lartigue (for NO
Underway	Formation of five working groups	Miami workshop part
TBD	Ecosystem Respsponse	Ecosystem
TBD	Integrated Ecosystem Assessment.	Ecosystem
TBD	Interagency Well-being Indicator Workshop Organ	Social Sciences Theme
TBD	Communities-measures and methodologies Venu	Social Sciences Theme
TBD	Economics, Information, and Decision Support for	Social Sciences Theme
TBD	Protected species	LMR theme
TBD	Long term impacts with LMR and what assessmer	LMR theme
TBD	Pelagic Ecosystem Workshop	LMR theme

Description
Sub-surface oil transport and fate-what are the results to
Standards and protocols for collection and testing of sam
Follow-on to AOML/SEFSC-Gulf wide monitoring plan for
Identify existing information and gaps for assessing impacts of
To restore the Gulf so that it is better than it was before the sp
Internal Workshop NOAA to determine data policy on what da
A second workshop would be much more broadly based, inclu
Fisheries, Human health exposure, Air quality (human/marine
Focus on Priorities to lead down the road-learn what is really r
What waw done/needs to be done in tems of the social scienc
What have we learned
This will be a follow up of the first workshop held in Miami, an
The Miami Worshop recommended the formation of five work
What people did and why in response to the spill?
Integrated Ecosystem Assessment.
Well-being is utilized as a measure of quality of life in many co
Purpose of the workshop is to bring together researchers to sh
Purpose of the workshop is to share ideas, preliminary results a
Stranding and population abundances -Toxicological effects of
Focus on seafood safety and resources
tagging and large scale movements, larval and egg survival and

Received(Date): Tue, 14 Sep 2010 09:25:42 -0400
From: "Jen.Pizza" <Jen.Pizza@noaa.gov>
Subject: Re: FW: Your Legacy
To: Pat A Simms <Pat.A.Simms@noaa.gov>
Cc: Jane Lubchenco <Jane.Lubchenco@noaa.gov>,"DWH.staff@noaa.gov" <dwh.staff@noaa.gov>,"amrit.mehra@noaa.gov" <Amrit.Mehra@noaa.gov>
Attachment

Hi Pat,
I'll get back to you on this.
Best,
Jen

Jane Lubchenco wrote:
>
> Please let me know what to do with this one. Thanks
>
>
>
> Pat
>
>
>
>
>
> *From:* John Newlin [mailto:jnewlin@cox.net]
> *Sent:* Monday, August 30, 2010 12:51 AM
> *To:* jane.lubchenco@noaa.gov
> *Subject:* Your Legacy
>
>
>
> Jane,
>
>
>
> Your incompetence as the Administrator of NOAA in dealing with the
> massive oil spill in the Gulf of Mexico will live in infamy and will
> define your legacy both as a person and as a supposed scientist. The
> oil is not "gone" Jane! It persists along with the toxic dispersants
> that you allowed to be pumped into the once pristine waters of the
> Gulf of Mexico.
>
>
>
> Read this and then tell me that the oil is "gone."
>
>
>
> The environmental analyst who worked with this writer did so on
> condition of anonymity, and performed a micro extraction that tests
> for Total Petroleum Hydrocarbons (TPH). The lower reporting limit the
> analyst is able to detect from a solid sample like the absorbent pad
> is 50 parts per million (ppm).
>
> The first sample this writer took was from a sorbent pad dropped
> overboard to a depth of approximately eight feet and held there for

> roughly one minute. The location of this was 30 18.461 North, 089
> 14.171 West, taken at 9:40 AM. This sample tested positive for oil,
> with a hydrocarbon concentration of 479 ppm. Seawater that is free of
> oil would test at zero ppm of hydrocarbons.
>
> The second sample this writer took was from a sorbent pad dropped
> overboard to a depth of approximately eight feet and held there for
> roughly one minute. The location of this was 30 18.256 North, 089
> 11.241 West, taken at 10:35 AM. This sample tested positive for oil,
> with a hydrocarbon concentration of 587 ppm.
>
> "For the sorbent pads, I had to include the weight of the actual pad
> itself, so that the extraction was done as a solid," the environmental
> analyst explained. "Had I had enough liquid in these samples to do a
> liquid extraction, the numbers would have been substantially higher."
>
> Jonathan Henderson, with the nonprofit environmental group, Gulf
> Restoration Network, was on board to witness the sampling.
>
> It would seem that you are joined at the hip with BP, Jane. Or is it
> that you and President Obama want the situation in the gulf to
> disappear from the public's horizon before the November election?
> Either way, you are a scum bag, Ms. Lubchenco. You are an enemy of the
> American people and will forever be remember for allowing the
> poisoning of the Gulf of Mexico.
>
> Someday, in the not-to-distant future, Jane, the truth will come out
> and you will rightfully suffer the castigation and humiliation you so
> richly deserve!
>
> Cdr. John Newlin, USN (Ret.)
> 739 Nob Circle
> Vista, CA 92084
> B6 Privacy
> B6 Privacy
>

Hi Pat,
I'll get back to you on this.
Best,
Jen

Jane Lubchenco wrote:

> Please let me know what to do with this one. Thanks
>
> Pat

Pat.A.Simms
Executive Assistant to UNSEC

202/482-3436 Work
202/309-0278 Mobile
Pat.A.Simms@noaa.gov

1401 Constitution Ave, NW
Rm 7316
Washington, DC 20230

From: John Newlin [mailto:jnewlin@cox.net]
Sent: Monday, August 30, 2010 12:51 AM
To: jane.lubchenco@noaa.gov
Subject: Your Legacy

Jane,

Your incompetence as the Administrator of NOAA in dealing with the massive oil spill in the Gulf of Mexico will live in infamy and will define your legacy both as a person and as a supposed scientist. The oil is not "gone" Jane! It persists along with the toxic dispersants that you allowed to be pumped into the once pristine waters of the Gulf of Mexico.

Read this and then tell me that the oil is "gone."

The environmental analyst who worked with this writer did so on condition of anonymity, and performed a micro extraction that tests for Total Petroleum Hydrocarbons (TPH). The lower reporting limit the analyst is able to detect from a solid sample like the absorbent pad is 50 parts per million (ppm).

The first sample this writer took was from a sorbent pad dropped overboard to a depth of approximately eight feet and held there for roughly one minute. The location of this was 30 18.461 North, 089 14.171 West, taken at 9:40 AM. This sample tested positive for oil, with a hydrocarbon concentration of 479 ppm. Seawater that is free of oil would test at zero ppm of hydrocarbons.

The second sample this writer took was from a sorbent pad dropped overboard to a depth of approximately eight feet and held there for roughly one minute. The

location of this was 30 18.256 North, 089 11.241 West, taken at 10:35 AM. This sample tested positive for oil, with a hydrocarbon concentration of 587 ppm.

"For the sorbent pads, I had to include the weight of the actual pad itself, so that the extraction was done as a solid," the environmental analyst explained. "Had I had enough liquid in these samples to do a liquid extraction, the numbers would have been substantially higher."

Jonathan Henderson, with the nonprofit environmental group, Gulf Restoration Network, was on board to witness the sampling.

It would seem that you are joined at the hip with BP, Jane. Or is it that you and President Obama want the situation in the gulf to disappear from the public's horizon before the November election? Either way, you are a scum bag, Ms. Lubchenco. You are an enemy of the American people and will forever be remember for allowing the poisoning of the Gulf of Mexico.

Someday, in the not-to-distant future, Jane, the truth will come out and you will rightfully suffer the castigation and humiliation you so richly deserve!

Cdr. John Newlin, USN (Ret.)



Pat.A.Simms
Executive Assistant to UNSEC

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202/309-0278 Mobile
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Received(Date): Tue, 14 Sep 2010 06:31:33 -0700
From: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>
Subject: RE: Help for james - urgent
To: James Chang <James.Chang@noaa.gov>, Frank Parker <Frank.Parker@noaa.gov>,"'Margaret.Spring@noaa.gov'" <Margaret.Spring@noaa.gov>
Cc: Christine Blackburn <Christine.Blackburn@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>

鞅浥猬
輅牥　　潭攠浯牥　慣歧牯晦搠潮⁴桥　楳瑟湩湧　敨獩潮猰璔慴]牡湫⁷牯瑟⁵濕ˬ汳漬慮榗荼攬]牡湫　淅
物搣污　捯畬搠祯眭来瑍愠捯晦瑍潮⁴桥　睩托爟潦　潭浥涩猰牥捥瓷敷　湤　捣澈涩敷　淅　渠璔攠摲憋
瑍獵戴獵牦慣攠浯湩瑯物湧⁰污漆□　汳漠捯晦瑍匬㊡渭浥猰潮⁴桥　慏瑟爟骷獾物拎瑩潮　楳瑍摡瑟搠惘嬿

佮ˬ晷畳瑍ᵇᵢ　湤　数瑟浢敲‰　湤′　乏案　慅潮朠睩璔　楑桴　璔敲　敷敲慅　来湣榗猰　協倬[偊　啓
鈇　乓衹　鏵　啓獵　堬　湤　　捯滐酘敷　　敲榗猰潦⁰畢汨挠汨獙酘楮朠獩獳榠淗⁷楴桌璔攠數瑟垒慅
捩酘瑩晚挠捯浭晦楴磷悽浥搠慴　潬楣楴楮朠灵瑍瑯⁴桥　澈汳　獙牡瑟朽豉　慮搠業灬豢酘聊瑩潮　映
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Sent: Tuesday, September 14, 2010 9:26 AM
To: Frank Parker; Gabrielle Dreyfus; 'Margaret.Spring@noaa.gov'
Cc: Christine Blackburn; 'James.Chang@noaa.gov'
Subject: Re: Help for james - urgent

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jc
On-the-go; pls excuse brevity.

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See attached.

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Sent: Tuesday, September 14, 2010 09:20
To: Margaret Spring
Cc: Christine Blackburn; James Chang; Frank Parker

Subject: RE: Help for james - urgent

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We're working this.
Gabrielle

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From: James Chang [mailto:James.Chang@noaa.gov]
Sent: Tuesday, September 14, 2010 9:09 AM
To: Margaret Spring
Cc: Gabrielle Dreyfus; cblackburn31@netscape.net
Subject: Re: Help for james - urgent

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Subject: RE: Help for james - urgent
To: Gabrielle Dreyfus <Gabrielle.Dreyfus@noaa.gov>,James Chang <James.Chang@noaa.gov>,"'Margaret.Spring@noaa.gov'" <Margaret.Spring@noaa.gov>
Cc: Christine Blackburn <Christine.Blackburn@noaa.gov>,_HQ Deep Water Horizon Staff <dwh.staff@noaa.gov>,Steve Murawski <Steve.Murawski@noaa.gov>, Beth Lumsden <Beth.Lumsden@noaa.gov>
DWH - listening session summary.doc
DWH - listening session summary.pdf

周敲攠睥牥　灰牯蜇淳瑙泅㊡捯浭酘瑳　散敦癥搠晲潭⁴桥　砣敲湡氠捯浭晦楴礬　湤　慣粟牥獰潮搪涎散敦癥搠慮　淳楬　牯洚璟攠啁繓†犿牲酘壅礬-桲楳　斀摹　狪醫牧楮膜瑯　楮⁴桥　潭浥涎狪楮瑯　淅淳珼璟慴　菜潬狪景爟畳⁴漠獨慲攠璟攠捯浭酘瑳　湤　潬⁴桥磷睥牥　摛畤楣慴斀⁷楴粟璟攠數瑙垉慬　潭淞湩琛　攘朮　慬氠匝㊡灥潰汶

周攠匾㊡灥潰汶⁴桡珼獼抆磷牥皖栘⁴漠楳⁴桥　楳珼潦　彀酘搪數　珼璟攠璟牥攠醫牧獨潰猬⁴桥′～　牯洚鰋唠楮　晦攬　湤⁴桥′㊡淵　漠獞榱涎楳瑳⁴桡珼睥　慶攠托酘⁴牡捫楮膜枴癥渠璟敦爟浯牥⁶潣慬　潬攠楮⁴桥　斀棆　桥渠睥　敨黂斀　異汨捡瑙　涎物數　整挠璟攠汨獚　狪摒潳敲⁴漠仟 。仍難

爻瑩湧⁴桥　牡晴　敬潬　璟敲攠睥牥‴⁴潴慬　斀敲慬　来湣榱狪璟慴　牯癥⁴桥　畳　睩璟　佁襢摒駁牠磷楮⁴桥　駁搮†鈚桡癥　彀慣桥搠慍浯牥　整悽洟搠獵浭慲磷潦⁴桥　數獩潮狪璟慴⁷攠捯浰洟瑙搠污獚　楑桴　桥獌　潴數　慶攠湯珼托酘　楳璗楢畴斀　扵珼澈爟灬慮　狪瑯　漠璟慴⁴潤懪　□　牡晴斀⁴桥　潭汯睩湧　黂敲　淳楬　淅⁴桡珼浥獳慧攠污獚　楑桴　湤　珼楳⁰慳瑙搠托汯眠慮搠潰酘　淅　潭浥涎

潰攠璟楳　敬匆
牡淞

矧秧吠乏呅]佒　鏁呅义毛　蘩卉低匠刞梁聳篛錘

羫菜駁杵數

渠托桡汦　映璟攠皖搗牡氠哺浩汹　璟慮欠祯昨景爟灡牴楣梘慴楮朠慮搯淵　峉牥獳楮朠楮瑙牥獚　渠璟攠摩獸畳獩潮　數獩潮狪桥汤˛暑 幺饦鹵灴′　珼璟攠啮瓷敲獩璨　映卯疇粟襫淵楁懇　楳獩獳梘灩　聊瑙　湩癥牳楴礬　湤　畬慮攠啮瓷敲獩璨　桥⁰畬灯獌　映璟數攠摩獸畳獩潮　數獩潮狪睡狪瑯　湦淵泱璟攠慣慤嘲楣　湤⁰物癡瑙　數駁牝粟捯浭晦楴磷慢澈珼璟攠杯僅猬　璯慴敲榱狪慮搠業灬駁酘聊瑩潮　映璟攠獵戴獵牦慣攠潩氠慮搠摩獰敲獡涎　潮楴淵楮朠灬慮　敦湧　敶敬潰斀　磷璟攠啮楦榱搠稽駁-潭淳湤慮搠業灯牴慮璾礬⁴漠慤撕數狪祯畬　略獚楀滿　湤　薂欠祯畬　漾畴

攠慰灱散榆瑙搠璟攠烳數瑩潮狪慮搠摩僅潧略　酘敲慴斀　珼駁捨　映璟數攠浥整楮杳　湤⁷攠灡慮⁴漠托數灯滿傺攠瑯⁷桡珼睥　駁牝　攠捯滿樧敲⁴桥獌　癥涎狪慔　潮瑩涘慴楀渠潦⁴桥　榆汯杵攠睥　聊牴斀　渠韗渜　珼鰋唬　湤　潯欠景牷慲搠瑯　潮瑩涘楮朠瑯　涎敲慣珼慮搠獨慲攠璟楮景牠慴楀渠睩璟⁴桥　砣敲湡氠獩榱敲　慶攠托酘⁰潳瑙搠潮⁴桥⁷敢　湤　潮瑩涘澈獬磷異摡瑙搠獩潛璟攠駁牠磷摡裖　映璟攠駁敲　来潛磷牥獰潮獌　晦淅琮†傯駁獌　燬⁴桥　潬汯睩湧⁷敢獩瑙狪慮搠璟汨淑狪捯涎悻渜搠璟敲敦渠景爟摡聊⁴桡珼楳　畬牥涎洶　癡楬慢伎孳

癥牡菜搌　褽瀺　睫睭牥獚湘整桥杵汦　黂
乏案搌　褽瀺　睫睭湯恞　黂　捩酘捥浩獳楀滿　灯楬獰楬氮桴浬
偊搌⁷睫　灡　黂　匆灩菜
啓獵搌　褽瀺　睫睭畳杳　黂　楬獰楬氧

攠桡癥　褽慣桥搠璦漠摯捵浥涎狪璟慴　楑桨楑桴　摙楴楀渠氠摡聊　湤　湦湘淳瑩潮⁷敢獩瑙猬　菜　映睨楣粟慲攠慣捥獳楪伎　牯洚璟攠憼湘敲酘瑩潮斀⁷敢獩瑙敵

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Kind Regards,
Dr. Larry Robinson, NOAA Assistant Secretary of Commerce for Conservation and Management

-----Original Message-----
From: Gabrielle Dreyfus
Sent: Tuesday, September 14, 2010 09:32
To: James Chang; Frank Parker; 'Margaret.Spring@noaa.gov'
Cc: Christine Blackburn; _HQ Deep Water Horizon Staff
Subject: RE: Help for james - urgent

James,
Here's some more background on the listening sessions that Frank wrote up. Also, Danielle, Frank, or Mridula, could you get a count on the number of comments received and accounted for on the draft sub-surface monitoring plan? I also count 510 names on the Master Distribution list dated 9/7.

On August 31 and September 1 and 2, NOAA, along with eight other federal agencies (OSTP, EPA, USCG, NSF, NIH, USGS, X, and X) convened a series of public listening sessions with the external scientific community aimed at soliciting input to the goals, strategies, and implementation of the sub-surface oil and dispersant monitoring plan being developed by the Unified Area Command (UAC). The events, hosted by the University of South Florida, Mississippi State University (in partnership with Mississippi-Alabama Sea Grant and the Northern Gulf Institute), and Tulane University, brought together approximately 280 people representing academic institutions, state agencies, private research consortia, non-governmental organizations, and private industry. Participants were thankful for the opportunity to engage representatives from the federal government in these open and transparent sessions. The discussions covered a broad diversity of topics, including the need for continuing this dialogue and enhancing the communication and flow of data and information, the need for a comprehensive plan that spans in-shore, near-shore, shelf, and deep-sea environments, the need for a robust integrated ocean observing system, and questions about the distinctions between the Natural Resource Damage Assessments process, Response efforts, and assessments of long-term ecosystem impacts. The public will have an opportunity to provide written comments to the plan when it is released next week.

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Discussion Sessions on Sub-Surface Oil Sampling Plan

Summary:

On August 31 and September 1 and 2, seven federal agencies (the Office of Science and Technology Policy [OSTP], the National Oceanic and Atmospheric Administration [NOAA], the Environmental Protection Agency [EPA], US Coast Guard [USCG], National Science Foundation [NSF], the National Institutes of Health [NIH], and the US Geological Survey [USGS]) convened a series of public listening sessions with the external scientific community aimed at soliciting input to the goals, strategies, and implementation of the sub-surface oil and dispersant monitoring plan being developed by the Unified Area Command (UAC). The events, hosted by the University of South Florida, Mississippi State University (in partnership with Mississippi-Alabama Sea Grant and the Northern Gulf Institute), and Tulane University, brought together approximately 280 people representing academic institutions, state agencies, private research consortia, non-governmental organizations, and private industry. The discussions covered a broad diversity of topics, including the need for continuing this dialogue and enhancing the communication and flow of data and information, the need for a comprehensive plan that spans in-shore, near-shore, shelf, and deep-sea environments, the need for a robust integrated ocean observing system, and questions about the distinctions between the Natural Resource Damage Assessments process, Response efforts, and assessments of long-term ecosystem impacts. Attendees at these sessions and others in the external scientific community were invited to submit written comments to the plan after it was released. Comments were to be sent to subsurface.plan@noaa.gov.

Panel (from Tulane University meeting):

Dr. Steve Murawski, NOAA – Moderator
Dr. Larry Robinson, NOAA
Dr. David Conover, NSF
Dr. Jerry Miller, OSTP
Dr. Lek Kadeli, EPA
Dave Westerholm, NOAA
Dr. Cindy Sunich-Mullen, EPA
Craig Carroll, EPA
Dr. Dawn Lavoie, USGS
CAPT Will Ellis, USCG, UAC
LCDR Gregory Paul, USCG, Coast Guard Academy

Opening Remarks (from Tulane University meeting):

Dr. Steve Murawski, NOAA

- The goal is to develop a plan to figure out where oil is in the environment so that we can formulate response actions aimed at determining if there is recoverable oil in the environment.

Dr. Larry Robinson, NOAA

- We are soliciting feedback to help this plan get better and appreciate your instructive feedback to this process.

Document ID: 0.7.19.693.1

Discussion Sessions on Sub-Surface Oil Sampling Plan

CAPT Will Ellis, USCG
- In responding to a directive from ADM Allen to implement a strategy for subsurface monitoring, our purpose is to share information and work collaboratively to ensure the plan comprehensively addresses what is needed.

Dr. Jerry Miller, OSTP
- President emphasizes the use of sound science in supporting the solutions to this environmental challenge.

Dr. David Conover, NSF
- National Science Foundation has responded to the spill, issuing over $16 M in Rapid Response Research (RAPID) awards. This disaster is an opportunity to advance our understanding.

Dr. Lek Kadeli, EPA
- EPA is significantly involved in a number of science issues related to the spill, and we are encouraged by the potential for working with the external community.

Dr. Dawn Lavoie, USGS
- USGS is also here to support this type of engagement. Growing this partnership is central to our success.

Introductions of Participants (around the room introductions)

Presentation from Federal Family:

Dr. Steve Murawski, NOAA:

<u>Today's discussion</u>
- What are the priorities for what the UAC proposes in the sampling plan?
- How will this plan meet the objectives outlined in the directive?
- How can we encourage academic participation in the program, including collection of data, incorporation of academic data, and analyses?
- How can we maintain a continuous communication link?

<u>Prior Meeting at the University of South Florida (Tuesday, Aug 31)</u>
- Need for more complete and easy access to data already obtained
- Identify the availability of ships and other opportunities to partner to collect data (multidisciplinary expeditions)
- Greater need to collaborate on modeling
- Need to fully support an integrated ocean observing system (IOOS) in the Gulf of Mexico (GoM)
- Need for focus on ecological observing and forecasting
- Need for ready response to re-suspension / re-distribution of oil by severe weather (hurricanes)
- Need for information on full array of funding opportunities

<u>Prior Meeting at Mississippi State University (Wednesday, September 1)</u>
- Need for more transparency on where data and samples already collected are being stored and how scientists can access these resources
- Need to strengthen communication among academic and agency scientists and to forge more collaborative approach

Document ID: 0.7.19.693.1

- Need for more long-term support for monitoring and research
- Request for high-resolution bottom mapping information from oil companies that may have conducted mapping
- Natural seeps in the region may be contributing methane and oil north of the well site and mapping these contributions

Dave Westerholm, NOAA:

- What are the Federal On-Scene Coordinator (FOSC) requirements under the directive from the National Incident Commander?
- 13 elements described in the slides
- Discussion of the August 18 memorandum
- Description of the classes of science related to oil spill response—Response, Natural Resource Damage Assessment, and research

Charlie Henry, NOAA:

<u>Components of the plan</u>

- Described the role of the NOAA Scientific Support Coordinator (SSC)
- Looking at coastal, continental shelf, and deepwater environments
- We learned in real time as we have responded to the spill
    - A monitoring program has been in place since we started the response effort and remains a priority
    - The response effort for monitoring has been tied into the effort to incorporate different types of modeling
- Implementation of the directive is a continuation of the work we've done since the beginning.
- It's about the path forward – this is an opportunity to step back and look at what we're doing and how we can provide the US Coast Guard with the best information and support possible.
- Response Actions – everything we do in response has to be adaptive
    - Use adaptive science to continue monitoring for actionable levels of oil and dispersants on their degradation products
    - Actionable concentrations relate to concentration levels related to human health and defined as being amenable to specific response actions
- This implementation plan does not focus on questions unrelated to potential response actions, though data generated by this plan clearly will be critical for information on variety of other activities.
- We have been working collaboratively in real-time:
    - Participation of academic scientists with expertise in pre-spill state of the GoM.
    - Communication and information exchange at sea important, not currently being done well, want to make this a key element moving forward.
- Samples to date and sample design
    - Near-shore: about 5,000 sediment and water samples
    - Offshore: 15, 250 sediment and water samples to date
    - More than 25,000 air samples collected to date
    - We have adapted sampling technologies during the response to meet what we are observing in the field

Document ID: 0.7.19.693.1

    - Identified 3 strata for enhanced sampling: near-shore, offshore, deep water
        - Near-shore: Fairly robust sampling, but we did a gap analysis and identified another 128 samples in the near-shore
        - Shelf: Must include sediments (fluorescence camera system), and a combination of remotely operated vehicle platforms (e.g., gliders) to sample the water column and water surface
        - Deepwater: We need to understand the make-up and impacts the drilling mud may have had on the ecosystem, we need to have a robust plan to study any deepwater 'plumes'
    - We continue to look at characterizing the oil degradation process. We are looking to understand the oil by-products, the rate of microbial consumption, and issues related to dispersants and their by-products.
    - We are interested in improving our understanding of the role of seeps in the GoM larger marine ecosystem (LME).
- When does Response conclude and shift to NRDA?
    - We will reach a point that the emergency response will make a determination that there's nothing more we can do with removal action, but there is more we can do for NRDA

Discussion and Questions:

University of South Florida

- Please provide an update on the $500M BP has dedicated to scientific research. Will the funds remain in the Gulf coast?
    - BP (Pete Carriger): The $500M has been committed to by BP. We gave out $30M, and a plan is being developed to work with the 5 impacted states for the remaining $470M. The funds will be for the five states, but there is no guarantee that all of the funds will be executed there.
- What is the role of contractors?
    - We have been depending on contractors for much of the work thus far. In addition, there are many contracts with academics and private consultants.
- How do we coordinate efforts across the different groups responsible for administering the funds (e.g., Northern Gulf Institute, Florida Institute for Oceanography)?
    - We need to maintain communications links so that we do not pay for things twice. We need to make sure that principal investigators (PIs) are sharing information, and one forum for that will be the PI Workshop sponsored by the Joint Subcommittee on Ocean Science and Technology (JSOST) in October.
    - It was suggested that we develop a coordinating committee comprised of a representative from each of the groups responsible for administering the funds.
- Do we have maps of subsurface oil distributions, rates of biodegradation, and protocols in place for measurements?

Document ID: 0.7.19.693.1

    - We need to balance the need to get all of the data with protecting intellectual property rights of external PIs. It is important that we have a synoptic view of the data in order to inform the overall picture and it is especially important for modeling.
    - Metadata are critical. Most of maps to date show federal data sets.
    - Biodegradation rates are difficult to parse given the number of variables at play (e.g., continuous addition, dispersion versus degradation, methodological limitations on detection limits).
- There are reports that oil has been found on the continental shelf. Is there oil being upwelled onto the continental shelf and into sensitive fishing areas?
    - If you are referring to droplets then they will be strongly mixed. We need to get a better handle on the levels at which the threat is acute (parts per billion? Trillion?) When the public hears about oil they envision black tar-like layers of oil, which is not what we are observing in the subsurface.
- How do we model oil that has been dispersed? Oil droplets at 50 µm diameter may take more than 120 days to rise.
    - We are planning a modeling symposium. Large droplets rise in 3-4 hours, but smaller ones may never make it to surface. These modeling efforts and our observations will be very helpful in explaining how the oil behaves so we can be better prepared next time. This is the first deep water oil release we have had, and our experience is limited. The size of particles is from Streamlined Isokinetic Suspended Sediment Profile (LISST) measurements.
- The proposed sampling plan looks like it drops off near shore.
    - There are lots of processes to consider for the nearshore environment. Nearshore oil has likely sunk and been resuspended, but it is probably not from the deep sea. We need transects across the shelf.
    - If you are observing oil please send that information in as soon as possible. This is exactly the reason we are having this meeting.
- In terms of having the academic community be part of the sampling strategy, ship time has been limited. The state of Florida provided three ships that are relatively small coastal vessels with limited capacity. Many of the scientific questions we are asking require multidisciplinary approach. Are there NOAA vessels for academia and external partners?
    - We look for piggybacking opportunities in order to maximize our return on the investment in ship time. There are 6 vessels in the pattern now, all of which are essentially vessels of opportunity.
- We have been sampling closer to the Florida coast than the federal effort and have observed oil in areas that are not being addressed. DeSoto Canyon, for example, might need more attention.
    - If there are other data that show positive hits then we need to incorporate those data. Please share them.
- There is some confusion on funding mechanisms for short- and long-term research efforts. The academics have the knowledge, but not the means or funding to coordinate. Can we get federal assistance to help with coordination? How can the

Document ID: 0.7.19.693.1

Integrated Ocean Observing System (IOOS) and the National Oceanographic Partnership Program (NOPP) be involved?
    - There is a larger issue of funding IOOS in the GoM. During this response we have had the entire NOAA Atlantic ship fleet, gliders, AUVs, and other platforms available to assist. This is larger than anything that NOPP will be able to address. It needs to be permanent funding.
- The modeling effort by the academic community could also use better coordination with the federal family. Does IOOS recognize remote sensing observing efforts and modeling? Are the models we are using today biased by research on eddies from the past? We need more XBT and CTDs and less reliance on current data from the past.
    - Modeling efforts need to inform sampling the grid. We encourage you to share your information so that we can be informed in developing a synoptic approach.
    - The point on model bias is exactly tied to the need for IOOS and the inherent danger of extrapolating data.
- One common thread during this discussion is the communication of data and information.
    - We need to be careful with communication because information can have unintended consequences. For example, consider the major fish kill last week. The public connected it to the oil spill. Data indicated it is related to low dissolved oxygen concentrations that happen every year, but public perception was that it was oil related.
    - We need to connect with the public to learn about how effective our communications are.
    - We, the federal and external scientific communities, ought to have a common message and analyze data together. When we bombard the public with conflicting messages they struggle with it. We also have to watch out for too much communication because we do not want to overwhelm the public.
- Is there any data mining on seeps from other sources, like academia?
    - BP: we have comprehensive database on seeps, which is part of the National Resource Damages Assessment (NRDA) process. This data has been used in mission planning for Response efforts.
- Is there a mechanism to use aircraft for getting valuable current data into models?
    - To date we have used P-3 flights and gliders. We need to ensure that all vessels of opportunity (VOO) are measuring common metrics.
- Will the Response activities be used to inform the long-term effort of recovery?
    - An ecosystem framework is needed to pull all of those pieces together.
- Is the sampling plan going to be based on physical features or a grid?
    - We need to promote economies of technology. Consider the continental shelf, for example. We plan to use automated underwater vehicles (AUVs) as sentinels, and then take box-cores and other samples as observations require.
- This event, as defined, started at shallow end of “deep water”. Is there anything we can learn here that might translate to a spill at 10000 ft deep, for example?

Document ID: 0.7.19.693.1

    - Although somewhat rhetorical, we have learned a lot about the physics, but extrapolation is a challenge.
    - BP: knowing your oil is the first part because it will tell you something about its behavior. The knowledge gained on that front is this disaster will help inform future spills in that regard.
- Where are all the data from previous spills, lessons learned, etc.?
    - The oil spill response community is small. We have a conference in GoM every year for the last 20 years and they have a large body of literature. There is also a parallel international organization that maintains a large body of information. Outside of these sources information is difficult to come by.
- Does the name, subsurface, imply that we might not focus our attention on other areas, for example the air-sea interface, as part of the oil monitoring program?
    - No, it is not meant to imply that. We are definitely interested in those other locations, especially the air-sea interface, which is important for egg larvae and fisheries, and microbial activity.
- Many of the comments today focus on the long-term recovery aspects of this rather than the response actions as outlined in the plan. What do we respond to?
    - The driver here is the response effort – where is the oil? – which serves as the base plate for what impacts it will have. We want to hear your comments on the response plan, and we also want to hear about the transition between this response plan and the long-term research questions.
- It takes a lot of work to get to standards for analyses. Can you please share standards, including degradation products and other things?
    - We have been developing methods for analyses. Tests for Corexit, for example, did not exist. As these tests are developed we need to share, not just the methods, but also the standards.
    - BP: We have lots of oil, but it came to the surface. We are limited with respect to the amount of oil from the reservoir. We request that you fill out a form that states clearly the intent of your experiments, and as these forms are approved we will share samples. We have rarely denied oil if the purpose is clearly stated.
- What do we mean by "recovery"? What is “good enough”?
    - Part of NRDA is to assess damages to ecosystem resources in terms of environmental impact and what it would take in terms of funding to help restore environmental services of those impacted environments.
    - There is a gray zone between NRDA and evaluating long-term recovery. We cannot wait 20 years to assess impact and then start to restore.
- State agencies have lots of scientists bridging basic and applied science, for example the Florida Geological Survey. How can groups such as this get involved in the modeling effort?
    - The plan is adaptive, and by that we mean that it must adapt to changes based on our observations. We will go back and look at whether there is an ensemble model that we should be doing—if there is, then we will do that.

Document ID: 0.7.19.693.1

Mississippi State University

- Would you explain further about the Aquatrack fluorometer?
  - It is comparable to a Colored Dissolved Organic Matter a (CDOM) fluorometer, but this fluorometer is more optimized to the hydrocarbon signal. It is much more sensitive to what we were using before.
- What was the climatology that was used for dissolved oxygen concentrations?
  - It is 6.9 mg/liter, based on seasonal background for more than 30 years of data in the World Ocean Database.
- What about vertical intervals of sampling?
  - Measurements are taken continually during descent through the water column.
- What is actionable oil?
  - Oil that we can do something about in the emergency response phase. It needs to be at a level where we can take an action. We are talking about the dissolved phase of oil concentration
- Is Rutgers working on a consolidation of all the datasets?
  - No, but they are hosting the LIDAR data.
- What is being done to prevent duplication of effort? How does all of the USGS work align with NOAA efforts?
  - We are working to coordinate efforts as much as possible, but we are balancing that against the need for real-time efforts while in emergency response mode. So, there was likely some duplication of effort, but to the extent possible we have minimized it.
  - A lot of the baseline data collected by USGS is contained with ERMA.
- How effective is a fluorometer in tracking plumes? (Using an *in situ* mass spectrometer, they found methane plumes quite deep, but this is not shown on the maps.)
  - The R/V *Ryan Chouest* is using echo sounders to help detect methane plumes (R/V *Brooks McCall* is doing this as well). They have found previously unrecorded plumes, a lot more methane plumes than we realized.
- Is there a coordinated effort to assess the impacts on the biology and to look at dispersants?
  - Yes, the dispersants are being looked at, and biology is being assessed under NRDA.
- When will these data be available?
  - The pre-assessment data are being made available. The post-assessment data also will go out. However, an agreement is not in place, so we do not know yet when it will be made available to the public
- Are you looking at degradation products?
  - Yes, we have started looking and have selected particular markers. However, they may not be unique to this oil/dispersant itself.
- The overall approach in reaching out to the academic community is an adaptive approach. But, unless the community has access to the information, they have

Document ID: 0.7.19.693.1

nothing to which they can adapt. The R/V *Ryan Chouest* effort by the UAC did not allow academics to adapt and help the process.
    - We are getting everyone together now. As this plan gets laid out, we need to have more open communication back and forth with the community to help with the adaptive process.
    - We will send attendees links for all the data (e.g., dissolved oxygen profiles).
- On the continental shelf, good resolution imagery is needed to see seeps. BP should be asked to release the data they used for the old MMS data analysis of the area. Raw data collected before the spill can be used as to compare to the new data.
    - There were a considerable amount of data on seeps, and these data have been turned over to be used for recognizing natural and unnatural seeps.
- What is the best tool for observing the impacts of oil near-shore?
    - In the deep water, models are acceptable. For the shoreline, SCAT information is used. There is a lot of information on shoreline hydrology, and there is plenty of room for response by understanding the hydrology of the shoreline.
    - The shallow waters close to shore are complex. Freshwater discharges include a lot of the chemicals for which we are looking. We need to find ways to tease apart the signals and separate the contaminants from fresh water.
- On a JAG teleconference, there was some discussion about oil movement to the northeast. What did Bill Hogarth have to say on this?
    - There is sampling up to the northeast. USF sees general along isobath transport around 1300 meters, but there are lots of dry holes. USF did a cruise up to the DeSoto Canyon, and they found some oil on the bottom, but, they do not know the source of the oil, and because it is on the bottom it is highly weathered.
- Is there a way for the university folks who are doing legitimate research on bacterial degradation to get crude oil samples to benchmark samples collected at the site?
    - Those interested should talk to Peter Carriger from BP. BP is providing samples to those who are requesting them (providing they are legitimate).
- While people know that vessels are going out, it is hard to find out who is on the ship, what they are researching, and how someone can get involved. Where can people find points of contact?
    - The Subsurface Monitoring Unit (SMU) is a single point of contact for this, and they can provide detailed logistics and communications.
    - Samples should be used, and it is reasonable to distribute samples (maintaining chain of custody).
- What is the best mechanism for collaboration?
    - Populate the database on the Texas A&M University / Sea Grant website so that other researchers know what you are investigating. It is also searchable using keywords.
- How do we know when to stop sampling?
    - Critical questions include the difference between Response and NRDA, and what do we want for a long-term residual program. One big issue is

Document ID: 0.7.19.693.1

Secretary Mabus' recovery plan. There are lots of different priorities for different purposes. Recovery needs to be science-based.
    - While we are going to do this response action, this is itself is a dynamic process. What we know now is not what we will know 6 months from now.
    - BP (Carrigan): Repeat sampling over time at many stations can show what has happened.
- Where is the money for all this?
    - BP (Carrigan): Response and NRDA and BP are funding both of these things. There is $500M, of which $30M has already gone out to universities, leaving $470m to go out over the next 10 years. They are working with the five states and hopeful that they will see a formal structure for sampling over the next ten years. BP is committed to the long term plan.
    - NOAA was asked to develop a scope of work ($1M) for a project to look at ecosystem service impacts in the GoM for the National Academies.
    - NSF has a national focus. We want to gain knowledge from this oil spill that can be transferred to future oil spills.
    - Regarding data management, the archived data that has been QA/QC'd is accessible to you. Federal agencies need the trust and help of the academic community and want to work with them.
- Is using the National Coastal Data Development Center (NCDDC) as the warehouse for data, including those from BP, viable?
    - Yes. There will be a web interface with a single portal to access these data sets. NCDDC can help with the metadata. They will make sure that it is archived for posterity. The database will make it clear what can and cannot be shared. Authors will retain ownership of the data.
- Who is the main science point of contact, a person who can be contacted for higher-level information, not just a general place to send data?
    - We are talking about creating an ocean science group for this type of information. Where the boundaries between the Joint Analysis Group and such an ocean science group would be is something that would need to be discussed.
- How about providing the academic community with a small forum where they could present for 5-10 minutes?
    - There are a number of PI conferences that are going to be held.

Tulane University

- Is the data being shown in the slides publically accessible on the web?
    - We will distribute a short document that lists the different data sources and where they can be accessed. The SCRIBE database and other sources are all available.
- How do your data refute or support the recent findings that there is no more oil in the Gulf?

Document ID: 0.7.19.693.1

- Getting good estimates of the rates of degradation and evaporation of the oil is a challenge. One of the problems with getting the rates is the problem of continuous oil release from April 20 to July 15. Further, degradation of lighter vs. heavier components of the oil is a problem to be explored. There is currently an academic work in publication that addresses degradation.

- In the plan, how does the development of technologies to increase the pace of mitigation and solve problems earlier fit in?
  - It fits more into shoreline efforts than the offshore or deepwater work. It is impossible at this point to pump out the water from 5,000 meters down and treat it. However, such technology development in nearshore shoals has potential.
  - Over 35,000 people submitted ideas for innovation programs, and very few of those ideas made it through. After the Exxon Valdez incident, there was a lot of funding to look at new and improved technologies, and then that tapered off.
  - During emergency responses, most responders are most comfortable using tools with which they are experienced. Something new and unproven is hard to make happen during emergency response.
  - A lot of things were tried during this response – e.g., the use of deepwater dispersants. Another interesting question that came up was whether we should distribute oil-eating microbes in these kinds of situations. These types of questions are still open, and there is more to learn in both the shoreline and offshore areas.
- How about the need to monitor using non-traditional methods – e.g., a technology that combines a Global Positioning System with fluorometry?
  - One technology that has been tried in this situation is a sperm whale-tagging system. There also has been a bluefin monitoring study. A lot of real-time monitoring sensors have been dropped in places like the loop current.
  - A meeting participant added that monitoring devices can also be added to biodegradable materials.
- Can you tell us more about the dispersant degradation products that will be monitored under this plan?
  - Corexit is made up of surfactants and has a solvent delivery system to be able to promote contact of the surfactants with the target. There has been some look at what the degradation products are. What has been found is that product components have very short lives in the environments, and the degradation products have even shorter lives.
  - EPA developed a test for one component – Dioctyl Sulfosuccinate Sodium Salt (DOSS). We are applying that test now and seeing if we can track DOSS in seafood samples. This has been a successful element of the program, and we will be rolling it out soon, as an indicator of the dispersant. However, the DOSS itself is a common product in the environment and in human use. Whether we are tracking DOSS from the dispersants or as a pharmaceutical in the environment is an issue.
- BP should be providing samples of the material for isotope processing.

Document ID: 0.7.19.693.1

    - BP is not producing the chemical, and it is not a single product. It is largely a stockpile of drums, and there are a lot of unknowns. There are a lot of people interested in doing tests with samples of the dispersant.
    - BP (Pete Carriger): We have many barrels of oil, an archived set and chain-of-custody validated samples of oil from different vessels. A process is in place for obtaining samples. For those interested, write Carriger, and he will forward the request to the appropriate party. There is a form that would need to be completed by the requestor. There are also samples of Corexit available in totes.
- Does the nearshore sampling area in the plan include the inner estuary area of Lake Pontchartrain, etc.? If not, including the Lake Pontchartrain systems is recommended.
    - They are not currently being sampled, but once the tests are available, we will be happy to share them.
- Trying to determine what specific methods are being used (e.g., what polycyclic aromatic hydrocarbons [PAHs] are being measured for NRDA) is nearly impossible. Chemists would like this information.
    - The information on PAH chemistry is available online. We will revisit that page of websites – there are a lot of chemistry data out there.
- Will the presentation and implementation plan be available on the web? It has been three months since the Ocean Consortium proposed all of this. There appears to be a big gap between what's being done for mitigation and what the NRDA process is doing for damage assessment. How can you put together a budget without having that done?
    - The presentation is up on the NOAA website.
    - A lot of communication has occurred between now and the LSU meeting, but it has not been in this kind of forum. We are coming back to that now.
    - We are not specifically talking about NRDA. There are rules about how we collect data in a pre-assessment phase. If the process moves towards a legal proceeding against the responsible party, it becomes more difficult. There are many academics under contract for NRDA.
    - There is great interest in exploring some of these issues that are not NRDA and not response but are part of the broader science effort.
    - If the scientific community believes there is a wider piece that is not being addressed and people want a larger federal government presence, then they need to ask for it.
    - BP (Carriger): BP has committed $500 million over a ten-year period to academic research on oil and its long term effects in the Gulf of Mexico. As of today, BP already has granted $30 million of that, and many projects are being funded this way. There is another $10 million coming out under a press announcement today or tomorrow. The White House has indicated that BP should involve the States in the granting process for the rest of the funds. We're optimistic that we're close to a transparent method to allocate the remaining dollars. In that process, BP will have no vote on what is funded or published – it is a true grant, and it is moving forward.

Document ID: 0.7.19.693.1

- Agencies have been monitoring the GoM for decades. Is that work ongoing? If so, what is happening to those samples? Are they archived? If they are not doing that monitoring because of the response to the spill, when will they resume?
    - There are lots of biological sampling data available for baselines, and they have been posted on GeoPlatform, especially on abundance and morbidity of larvae, etc. When the well exploded, it was during the spring survey of bluefin tuna eggs and larvae in the area. We did not remove that vessel, but we asked the question of whether they should continue or be redirected to resource the spill. We have been trying to maintain the normal sampling to the extent possible. The Mussel Watch program is ongoing, with the test organism primarily being oysters. Nine different chemicals are tracked this way in this particular area. We have baseline data from that survey. We have historical information and we are going back out there now to test again.
- What is the extent of the impact of the surface oil in tropical populations in that region?
    - We have had a couple of cruises in the Florida straits and we have a regular sampling program off the Florida Keys.
    - Doing the complete kind of sampling we want to do is difficult. One of the biggest problems is that ecological impacts may occur even if the oil and dispersant are lower than our ability to detect. We, as well as many other people, have a nagging concern about whether we can detect what we need to detect. All of the data we have so far shows no obvious impact.
    - We found one case of far-field tar balls. We tracked that water into an eddy that has pinched off in the western Gulf of Mexico. When we revisited it, we did not find any tarballs.
- What are we actually measuring, and what is the split between sediment and water? What has been done in terms of deepwater sediment sampling?
    - There has not been a lot of deepwater sediment sampling. The University of South Florida has been gathering data using box-cores, for example. This has us thinking about whether we can do encounter-based sampling using fluorometry. One of the plan's proposals is to do this kind of thing by running AUV transects. A lot of mud was put down as part of Top Kill. We do not have access to the well site right now but at some point we will, and we would like to do some sampling there.
- How do we get started with sampling and be involved?
    - As we put together the sampling protocol, we can look for these kinds of opportunities to get people involved. E.g., if we have big enough ships to accommodate multiple investigators, that is something we want to do.
    - BP (Carriger): That is a marine operation, and we have a marine science coordinator from academia in the command post. There is the practical matter of getting someone onto a vessel, but we are ready to receive requests/proposals. Some visiting scientists have already been on the vessels.

Document ID: 0.7.19.693.1

- What is in the plan to enhance the needed development of theoretical models (more chemical than fluid dynamic) that predict where the oil goes, from the point of release up through the water column?
    - There are a number of operational sea-surface models available; there are six predictive models.
    - The critical issue being raised here is the subsurface piece. There are a couple of subsurface models that have been running. We have to combine the questions of the physical properties of oil with the hydrodynamic models.
    - Using the available data, we can take those models, reflect what was observed, and develop those models for long-term.
- Does the fact that the University of South Florida has not been mentioned mean that those data are invalidated?
    - The National Oceanographic Institute published a survey of chemistry samples. Whether the hydrocarbons found are the oil we are talking about or some other oil is still an open question.
- Have you considered adding a random sampling program to this plan (such as the current NOAA project that has collected 50 samples on a random grid offshore)?
    - Environmental Monitoring and Assessment Program (EMAP) is a long-standing program at EPA. They have published a number of products over the last five years, and they are happy to make available that information.
    - In the nearshore sampling in the Gulf, a random approach was used. On the continental shelf, we have a very prolific amount of data, and we used a justified approach.
- Has there been any microbial gene sequencing that can be used, given that microbial diversity may be a proximate indicator of some phenomena?
    - If we are going to collect all of these water samples, it would be a shame not to use sequencing on them.
- What is the role of the Department of Energy in responding?
    - They have been extensively involved, particularly in cleanup.
- To what extent is methane an issue in your sampling plan (John Kessler from Texas A&M has a large methane study)?
    - There have been concerns about high levels of methane apparently along with the droplets of oil. We have been primarily concerned with outcomes of hydrocarbons, and it's a little more difficult to track methane. But we are not ignoring it, and we are reaching out to look at that. NSF has two ships out looking at this now.
- We should consider positive aspects of dispersants as well. If we had not used dispersants, then we might have had a much more serious situation.
    - The efficacy of using dispersants is a longer term research program, and we need to use this opportunity for such research. There are concerns about creating hypoxia. We had very little science to draw on when we looked at the potential use of dispersants.
    - We spend a lot of time planning to respond to spills, and we would like to have more science to drive future response decisions about dispersants.

Document ID: 0.7.19.693.1

    - Early on, some people thought oil was going to get into the current, but that was not the case. People were also concerned about oxygen sag. The question is, did we get lucky? The mass of oil there was not in our control, but the rate of dispersant application was.
    - BP (Carriger): People complain and want to know where the data are. But the good thing is that there is a huge amount of data. It is difficult to get a handle on such huge data sets, but once we are able to integrate all this information, we can look at how it fits together.
- Is there a plan for how to pull together all available pre-spill data, since there has never before been a need to collate it for a response like this?
    - The Ecological Society of America and the American Fisheries Society have both put out calls for ecological baseline data. That information will allow us to look at some priorities for piggy-backing on other surveys.
- What do we know about what goes along with produced water from Deepwater Horizon?
    - We understand the chemistry. In this situation there was very little water.
    - BP (Carriger): In the discovery phase, there was no oil-water contact. There was no free water in the well. When we were producing through the enterprise and Q4000, a large majority of those days we had zero percent solids and other stuff, and later only 1 percent produced water. It's not a major part of the fluids that were put into the environment.
- People are developing new methods and new tools, and they are ready and willing to help.
    - There is lots of innovation going on, and this spill has witnessed the maturing of a number of technologies. Gliders are an example – the addition of fluorometers, oxygen meters, etc., has matured very quickly. Another example is ACDPs (Acoustic Current Doppler Profilers).
- What about the concern that migratory fish can disseminate oil microbes into other areas?
    - There have not been any PAH levels that have exceeded the standard, including in the sampling of tunas in the Gulf of Mexico. So far we have not seen any evidence that animals that have come into contact with oil are above detectable levels for any threshold.
- Could we use the pre-spill daily naval sampling data to determine changes due to the oil spill?
    - Those programs have dropped off somewhat lately. However, there are a lot of archived data available.
- What are the ideas for how to pull all these data together?
    - There have been a lot of comments about whether all of these data are coming in ways that scientists can use. We encourage academic collaboration with us on that. We see the need for more comprehensive reports, and we are planning for that. We need to do more with existing data. We have a science community here. If lack of funding is preventing full data analysis, then we need to figure how to address it.

Document ID: 0.7.19.693.1

- Have you considered creating funds for undergraduate research, an opportunity to get a lot of output for little input?
    - Yes, and this event will likely be the basis for all sorts of coursework. It will be good to use this as a way to interest people in science in general and teach the scientific method. There had been a small community of people working on this, but the community has become much bigger.
- Is the plan completely separate from the shoreline assessment? Does it inform the nearshore sampling process?
    - Yes to both. We do use the mapping to identify the areas where we believe there may be an issue. A lot of effort is needed to make sure we are to coordinating closely with our state partners on this.

Document ID: 0.7.19.693.1

Discussion Sessions on Sub-Surface Oil Sampling Plan

Summary:

On August 31 and September 1 and 2, seven federal agencies (the Office of Science and Technology Policy [OSTP], the National Oceanic and Atmospheric Administration [NOAA], the Environmental Protection Agency [EPA], US Coast Guard [USCG], National Science Foundation [NSF], the National Institutes of Health [NIH], and the US Geological Survey [USGS]) convened a series of public listening sessions with the external scientific community aimed at soliciting input to the goals, strategies, and implementation of the sub-surface oil and dispersant monitoring plan being developed by the Unified Area Command (UAC). The events, hosted by the University of South Florida, Mississippi State University (in partnership with Mississippi-Alabama Sea Grant and the Northern Gulf Institute), and Tulane University, brought together approximately 280 people representing academic institutions, state agencies, private research consortia, non-governmental organizations, and private industry. The discussions covered a broad diversity of topics, including the need for continuing this dialogue and enhancing the communication and flow of data and information, the need for a comprehensive plan that spans in-shore, near-shore, shelf, and deep-sea environments, the need for a robust integrated ocean observing system, and questions about the distinctions between the Natural Resource Damage Assessments process, Response efforts, and assessments of long-term ecosystem impacts. Attendees at these sessions and others in the external scientific community were invited to submit written comments to the plan after it was released. Comments were to be sent to subsurface.plan@noaa.gov.

Panel (from Tulane University meeting):

Dr. Steve Murawski, NOAA – Moderator
Dr. Larry Robinson, NOAA
Dr. David Conover, NSF
Dr. Jerry Miller, OSTP
Dr. Lek Kadeli, EPA
Dave Westerholm, NOAA
Dr. Cindy Sunich-Mullen, EPA
Craig Carroll, EPA
Dr. Dawn Lavoie, USGS
CAPT Will Ellis, USCG, UAC
LCDR Gregory Paul, USCG, Coast Guard Academy

Opening Remarks (from Tulane University meeting):

Dr. Steve Murawski, NOAA

- The goal is to develop a plan to figure out where oil is in the environment so that we can formulate response actions aimed at determining if there is recoverable oil in the environment.

Dr. Larry Robinson, NOAA

- We are soliciting feedback to help this plan get better and appreciate your instructive feedback to this process.

Document ID: 0.7.19.693.2

Discussion Sessions on Sub-Surface Oil Sampling Plan

CAPT Will Ellis, USCG
- In responding to a directive from ADM Allen to implement a strategy for subsurface monitoring, our purpose is to share information and work collaboratively to ensure the plan comprehensively addresses what is needed.

Dr. Jerry Miller, OSTP
- President emphasizes the use of sound science in supporting the solutions to this environmental challenge.

Dr. David Conover, NSF
- National Science Foundation has responded to the spill, issuing over $16 M in Rapid Response Research (RAPID) awards. This disaster is an opportunity to advance our understanding.

Dr. Lek Kadeli, EPA
- EPA is significantly involved in a number of science issues related to the spill, and we are encouraged by the potential for working with the external community.

Dr. Dawn Lavoie, USGS
- USGS is also here to support this type of engagement. Growing this partnership is central to our success.

Introductions of Participants (around the room introductions)

Presentation from Federal Family:

Dr. Steve Murawski, NOAA:

<u>Today's discussion</u>
- What are the priorities for what the UAC proposes in the sampling plan?
- How will this plan meet the objectives outlined in the directive?
- How can we encourage academic participation in the program, including collection of data, incorporation of academic data, and analyses?
- How can we maintain a continuous communication link?

<u>Prior Meeting at the University of South Florida (Tuesday, Aug 31)</u>
- Need for more complete and easy access to data already obtained
- Identify the availability of ships and other opportunities to partner to collect data (multidisciplinary expeditions)
- Greater need to collaborate on modeling
- Need to fully support an integrated ocean observing system (IOOS) in the Gulf of Mexico (GoM)
- Need for focus on ecological observing and forecasting
- Need for ready response to re-suspension / re-distribution of oil by severe weather (hurricanes)
- Need for information on full array of funding opportunities

<u>Prior Meeting at Mississippi State University (Wednesday, September 1)</u>
- Need for more transparency on where data and samples already collected are being stored and how scientists can access these resources
- Need to strengthen communication among academic and agency scientists and to forge more collaborative approach

Document ID: 0.7.19.693.2

- Need for more long-term support for monitoring and research
- Request for high-resolution bottom mapping information from oil companies that may have conducted mapping
- Natural seeps in the region may be contributing methane and oil north of the well site and mapping these contributions

Dave Westerholm, NOAA:

- What are the Federal On-Scene Coordinator (FOSC) requirements under the directive from the National Incident Commander?
- 13 elements described in the slides
- Discussion of the August 18 memorandum
- Description of the classes of science related to oil spill response—Response, Natural Resource Damage Assessment, and research

Charlie Henry, NOAA:

<u>Components of the plan</u>

- Described the role of the NOAA Scientific Support Coordinator (SSC)
- Looking at coastal, continental shelf, and deepwater environments
- We learned in real time as we have responded to the spill
    - A monitoring program has been in place since we started the response effort and remains a priority
    - The response effort for monitoring has been tied into the effort to incorporate different types of modeling
- Implementation of the directive is a continuation of the work we've done since the beginning.
- It's about the path forward – this is an opportunity to step back and look at what we're doing and how we can provide the US Coast Guard with the best information and support possible.
- Response Actions – everything we do in response has to be adaptive
    - Use adaptive science to continue monitoring for actionable levels of oil and dispersants on their degradation products
    - Actionable concentrations relate to concentration levels related to human health and defined as being amenable to specific response actions
- This implementation plan does not focus on questions unrelated to potential response actions, though data generated by this plan clearly will be critical for information on variety of other activities.
- We have been working collaboratively in real-time:
    - Participation of academic scientists with expertise in pre-spill state of the GoM.
    - Communication and information exchange at sea important, not currently being done well, want to make this a key element moving forward.
- Samples to date and sample design
    - Near-shore: about 5,000 sediment and water samples
    - Offshore: 15, 250 sediment and water samples to date
    - More than 25,000 air samples collected to date
    - We have adapted sampling technologies during the response to meet what we are observing in the field

Document ID: 0.7.19.693.2

    - Identified 3 strata for enhanced sampling: near-shore, offshore, deep water
        - Near-shore: Fairly robust sampling, but we did a gap analysis and identified another 128 samples in the near-shore
        - Shelf: Must include sediments (fluorescence camera system), and a combination of remotely operated vehicle platforms (e.g., gliders) to sample the water column and water surface
        - Deepwater: We need to understand the make-up and impacts the drilling mud may have had on the ecosystem, we need to have a robust plan to study any deepwater 'plumes'
    - We continue to look at characterizing the oil degradation process. We are looking to understand the oil by-products, the rate of microbial consumption, and issues related to dispersants and their by-products.
    - We are interested in improving our understanding of the role of seeps in the GoM larger marine ecosystem (LME).
- When does Response conclude and shift to NRDA?
    - We will reach a point that the emergency response will make a determination that there's nothing more we can do with removal action, but there is more we can do for NRDA

Discussion and Questions:

University of South Florida

- Please provide an update on the $500M BP has dedicated to scientific research. Will the funds remain in the Gulf coast?
    - BP (Pete Carriger): The $500M has been committed to by BP. We gave out $30M, and a plan is being developed to work with the 5 impacted states for the remaining $470M. The funds will be for the five states, but there is no guarantee that all of the funds will be executed there.
- What is the role of contractors?
    - We have been depending on contractors for much of the work thus far. In addition, there are many contracts with academics and private consultants.
- How do we coordinate efforts across the different groups responsible for administering the funds (e.g., Northern Gulf Institute, Florida Institute for Oceanography)?
    - We need to maintain communications links so that we do not pay for things twice. We need to make sure that principal investigators (PIs) are sharing information, and one forum for that will be the PI Workshop sponsored by the Joint Subcommittee on Ocean Science and Technology (JSOST) in October.
    - It was suggested that we develop a coordinating committee comprised of a representative from each of the groups responsible for administering the funds.
- Do we have maps of subsurface oil distributions, rates of biodegradation, and protocols in place for measurements?

Document ID: 0.7.19.693.2

    - We need to balance the need to get all of the data with protecting intellectual property rights of external PIs. It is important that we have a synoptic view of the data in order to inform the overall picture and it is especially important for modeling.
    - Metadata are critical. Most of maps to date show federal data sets.
    - Biodegradation rates are difficult to parse given the number of variables at play (e.g., continuous addition, dispersion versus degradation, methodological limitations on detection limits).
- There are reports that oil has been found on the continental shelf. Is there oil being upwelled onto the continental shelf and into sensitive fishing areas?
    - If you are referring to droplets then they will be strongly mixed. We need to get a better handle on the levels at which the threat is acute (parts per billion? Trillion?) When the public hears about oil they envision black tar-like layers of oil, which is not what we are observing in the subsurface.
- How do we model oil that has been dispersed? Oil droplets at 50 µm diameter may take more than 120 days to rise.
    - We are planning a modeling symposium. Large droplets rise in 3-4 hours, but smaller ones may never make it to surface. These modeling efforts and our observations will be very helpful in explaining how the oil behaves so we can be better prepared next time. This is the first deep water oil release we have had, and our experience is limited. The size of particles is from Streamlined Isokinetic Suspended Sediment Profile (LISST) measurements.
- The proposed sampling plan looks like it drops off near shore.
    - There are lots of processes to consider for the nearshore environment. Nearshore oil has likely sunk and been resuspended, but it is probably not from the deep sea. We need transects across the shelf.
    - If you are observing oil please send that information in as soon as possible. This is exactly the reason we are having this meeting.
- In terms of having the academic community be part of the sampling strategy, ship time has been limited. The state of Florida provided three ships that are relatively small coastal vessels with limited capacity. Many of the scientific questions we are asking require multidisciplinary approach. Are there NOAA vessels for academia and external partners?
    - We look for piggybacking opportunities in order to maximize our return on the investment in ship time. There are 6 vessels in the pattern now, all of which are essentially vessels of opportunity.
- We have been sampling closer to the Florida coast than the federal effort and have observed oil in areas that are not being addressed. DeSoto Canyon, for example, might need more attention.
    - If there are other data that show positive hits then we need to incorporate those data. Please share them.
- There is some confusion on funding mechanisms for short- and long-term research efforts. The academics have the knowledge, but not the means or funding to coordinate. Can we get federal assistance to help with coordination? How can the

Document ID: 0.7.19.693.2

Integrated Ocean Observing System (IOOS) and the National Oceanographic Partnership Program (NOPP) be involved?
    - There is a larger issue of funding IOOS in the GoM. During this response we have had the entire NOAA Atlantic ship fleet, gliders, AUVs, and other platforms available to assist. This is larger than anything that NOPP will be able to address. It needs to be permanent funding.
- The modeling effort by the academic community could also use better coordination with the federal family. Does IOOS recognize remote sensing observing efforts and modeling? Are the models we are using today biased by research on eddies from the past? We need more XBT and CTDs and less reliance on current data from the past.
    - Modeling efforts need to inform sampling the grid. We encourage you to share your information so that we can be informed in developing a synoptic approach.
    - The point on model bias is exactly tied to the need for IOOS and the inherent danger of extrapolating data.
- One common thread during this discussion is the communication of data and information.
    - We need to be careful with communication because information can have unintended consequences. For example, consider the major fish kill last week. The public connected it to the oil spill. Data indicated it is related to low dissolved oxygen concentrations that happen every year, but public perception was that it was oil related.
    - We need to connect with the public to learn about how effective our communications are.
    - We, the federal and external scientific communities, ought to have a common message and analyze data together. When we bombard the public with conflicting messages they struggle with it. We also have to watch out for too much communication because we do not want to overwhelm the public.
- Is there any data mining on seeps from other sources, like academia?
    - BP: we have comprehensive database on seeps, which is part of the National Resource Damages Assessment (NRDA) process. This data has been used in mission planning for Response efforts.
- Is there a mechanism to use aircraft for getting valuable current data into models?
    - To date we have used P-3 flights and gliders. We need to ensure that all vessels of opportunity (VOO) are measuring common metrics.
- Will the Response activities be used to inform the long-term effort of recovery?
    - An ecosystem framework is needed to pull all of those pieces together.
- Is the sampling plan going to be based on physical features or a grid?
    - We need to promote economies of technology. Consider the continental shelf, for example. We plan to use automated underwater vehicles (AUVs) as sentinels, and then take box-cores and other samples as observations require.
- This event, as defined, started at shallow end of "deep water". Is there anything we can learn here that might translate to a spill at 10000 ft deep, for example?

Document ID: 0.7.19.693.2

- Although somewhat rhetorical, we have learned a lot about the physics, but extrapolation is a challenge.
- BP: knowing your oil is the first part because it will tell you something about its behavior. The knowledge gained on that front is this disaster will help inform future spills in that regard.

- Where are all the data from previous spills, lessons learned, etc.?
  - The oil spill response community is small. We have a conference in GoM every year for the last 20 years and they have a large body of literature. There is also a parallel international organization that maintains a large body of information. Outside of these sources information is difficult to come by.
- Does the name, subsurface, imply that we might not focus our attention on other areas, for example the air-sea interface, as part of the oil monitoring program?
  - No, it is not meant to imply that. We are definitely interested in those other locations, especially the air-sea interface, which is important for egg larvae and fisheries, and microbial activity.
- Many of the comments today focus on the long-term recovery aspects of this rather than the response actions as outlined in the plan. What do we respond to?
  - The driver here is the response effort – where is the oil? – which serves as the base plate for what impacts it will have. We want to hear your comments on the response plan, and we also want to hear about the transition between this response plan and the long-term research questions.
- It takes a lot of work to get to standards for analyses. Can you please share standards, including degradation products and other things?
  - We have been developing methods for analyses. Tests for Corexit, for example, did not exist. As these tests are developed we need to share, not just the methods, but also the standards.
  - BP: We have lots of oil, but it came to the surface. We are limited with respect to the amount of oil from the reservoir. We request that you fill out a form that states clearly the intent of your experiments, and as these forms are approved we will share samples. We have rarely denied oil if the purpose is clearly stated.
- What do we mean by "recovery"? What is “good enough”?
  - Part of NRDA is to assess damages to ecosystem resources in terms of environmental impact and what it would take in terms of funding to help restore environmental services of those impacted environments.
  - There is a gray zone between NRDA and evaluating long-term recovery. We cannot wait 20 years to assess impact and then start to restore.
- State agencies have lots of scientists bridging basic and applied science, for example the Florida Geological Survey. How can groups such as this get involved in the modeling effort?
  - The plan is adaptive, and by that we mean that it must adapt to changes based on our observations. We will go back and look at whether there is an ensemble model that we should be doing—if there is, then we will do that.

Document ID: 0.7.19.693.2

Mississippi State University

- Would you explain further about the Aquatrack fluorometer?
  - It is comparable to a Colored Dissolved Organic Matter a (CDOM) fluorometer, but this fluorometer is more optimized to the hydrocarbon signal. It is much more sensitive to what we were using before.
- What was the climatology that was used for dissolved oxygen concentrations?
  - It is 6.9 mg/liter, based on seasonal background for more than 30 years of data in the World Ocean Database.
- What about vertical intervals of sampling?
  - Measurements are taken continually during descent through the water column.
- What is actionable oil?
  - Oil that we can do something about in the emergency response phase. It needs to be at a level where we can take an action. We are talking about the dissolved phase of oil concentration
- Is Rutgers working on a consolidation of all the datasets?
  - No, but they are hosting the LIDAR data.
- What is being done to prevent duplication of effort? How does all of the USGS work align with NOAA efforts?
  - We are working to coordinate efforts as much as possible, but we are balancing that against the need for real-time efforts while in emergency response mode. So, there was likely some duplication of effort, but to the extent possible we have minimized it.
  - A lot of the baseline data collected by USGS is contained with ERMA.
- How effective is a fluorometer in tracking plumes? (Using an *in situ* mass spectrometer, they found methane plumes quite deep, but this is not shown on the maps.)
  - The R/V *Ryan Chouest* is using echo sounders to help detect methane plumes (R/V *Brooks McCall* is doing this as well). They have found previously unrecorded plumes, a lot more methane plumes than we realized.
- Is there a coordinated effort to assess the impacts on the biology and to look at dispersants?
  - Yes, the dispersants are being looked at, and biology is being assessed under NRDA.
- When will these data be available?
  - The pre-assessment data are being made available. The post-assessment data also will go out. However, an agreement is not in place, so we do not know yet when it will be made available to the public
- Are you looking at degradation products?
  - Yes, we have started looking and have selected particular markers. However, they may not be unique to this oil/dispersant itself.
- The overall approach in reaching out to the academic community is an adaptive approach. But, unless the community has access to the information, they have

Document ID: 0.7.19.693.2

nothing to which they can adapt. The R/V *Ryan Chouest* effort by the UAC did not allow academics to adapt and help the process.
    - We are getting everyone together now. As this plan gets laid out, we need to have more open communication back and forth with the community to help with the adaptive process.
    - We will send attendees links for all the data (e.g., dissolved oxygen profiles).
- On the continental shelf, good resolution imagery is needed to see seeps. BP should be asked to release the data they used for the old MMS data analysis of the area. Raw data collected before the spill can be used as to compare to the new data.
    - There were a considerable amount of data on seeps, and these data have been turned over to be used for recognizing natural and unnatural seeps.
- What is the best tool for observing the impacts of oil near-shore?
    - In the deep water, models are acceptable. For the shoreline, SCAT information is used. There is a lot of information on shoreline hydrology, and there is plenty of room for response by understanding the hydrology of the shoreline.
    - The shallow waters close to shore are complex. Freshwater discharges include a lot of the chemicals for which we are looking. We need to find ways to tease apart the signals and separate the contaminants from fresh water.
- On a JAG teleconference, there was some discussion about oil movement to the northeast. What did Bill Hogarth have to say on this?
    - There is sampling up to the northeast. USF sees general along isobath transport around 1300 meters, but there are lots of dry holes. USF did a cruise up to the DeSoto Canyon, and they found some oil on the bottom, but, they do not know the source of the oil, and because it is on the bottom it is highly weathered.
- Is there a way for the university folks who are doing legitimate research on bacterial degradation to get crude oil samples to benchmark samples collected at the site?
    - Those interested should talk to Peter Carriger from BP. BP is providing samples to those who are requesting them (providing they are legitimate).
- While people know that vessels are going out, it is hard to find out who is on the ship, what they are researching, and how someone can get involved. Where can people find points of contact?
    - The Subsurface Monitoring Unit (SMU) is a single point of contact for this, and they can provide detailed logistics and communications.
    - Samples should be used, and it is reasonable to distribute samples (maintaining chain of custody).
- What is the best mechanism for collaboration?
    - Populate the database on the Texas A&M University / Sea Grant website so that other researchers know what you are investigating. It is also searchable using keywords.
- How do we know when to stop sampling?
    - Critical questions include the difference between Response and NRDA, and what do we want for a long-term residual program. One big issue is

Document ID: 0.7.19.693.2

Secretary Mabus' recovery plan. There are lots of different priorities for different purposes. Recovery needs to be science-based.
    - While we are going to do this response action, this is itself is a dynamic process. What we know now is not what we will know 6 months from now.
    - BP (Carrigan): Repeat sampling over time at many stations can show what has happened.
- Where is the money for all this?
    - BP (Carrigan): Response and NRDA and BP are funding both of these things. There is $500M, of which $30M has already gone out to universities, leaving $470m to go out over the next 10 years. They are working with the five states and hopeful that they will see a formal structure for sampling over the next ten years. BP is committed to the long term plan.
    - NOAA was asked to develop a scope of work ($1M) for a project to look at ecosystem service impacts in the GoM for the National Academies.
    - NSF has a national focus. We want to gain knowledge from this oil spill that can be transferred to future oil spills.
    - Regarding data management, the archived data that has been QA/QC'd is accessible to you. Federal agencies need the trust and help of the academic community and want to work with them.
- Is using the National Coastal Data Development Center (NCDDC) as the warehouse for data, including those from BP, viable?
    - Yes. There will be a web interface with a single portal to access these data sets. NCDDC can help with the metadata. They will make sure that it is archived for posterity. The database will make it clear what can and cannot be shared. Authors will retain ownership of the data.
- Who is the main science point of contact, a person who can be contacted for higher-level information, not just a general place to send data?
    - We are talking about creating an ocean science group for this type of information. Where the boundaries between the Joint Analysis Group and such an ocean science group would be is something that would need to be discussed.
- How about providing the academic community with a small forum where they could present for 5-10 minutes?
    - There are a number of PI conferences that are going to be held.

Tulane University

- Is the data being shown in the slides publically accessible on the web?
    - We will distribute a short document that lists the different data sources and where they can be accessed. The SCRIBE database and other sources are all available.
- How do your data refute or support the recent findings that there is no more oil in the Gulf?

Document ID: 0.7.19.693.2

- Getting good estimates of the rates of degradation and evaporation of the oil is a challenge. One of the problems with getting the rates is the problem of continuous oil release from April 20 to July 15. Further, degradation of lighter vs. heavier components of the oil is a problem to be explored. There is currently an academic work in publication that addresses degradation.

- In the plan, how does the development of technologies to increase the pace of mitigation and solve problems earlier fit in?
  - It fits more into shoreline efforts than the offshore or deepwater work. It is impossible at this point to pump out the water from 5,000 meters down and treat it. However, such technology development in nearshore shoals has potential.
  - Over 35,000 people submitted ideas for innovation programs, and very few of those ideas made it through. After the Exxon Valdez incident, there was a lot of funding to look at new and improved technologies, and then that tapered off.
  - During emergency responses, most responders are most comfortable using tools with which they are experienced. Something new and unproven is hard to make happen during emergency response.
  - A lot of things were tried during this response – e.g., the use of deepwater dispersants. Another interesting question that came up was whether we should distribute oil-eating microbes in these kinds of situations. These types of questions are still open, and there is more to learn in both the shoreline and offshore areas.
- How about the need to monitor using non-traditional methods – e.g., a technology that combines a Global Positioning System with fluorometry?
  - One technology that has been tried in this situation is a sperm whale-tagging system. There also has been a bluefin monitoring study. A lot of real-time monitoring sensors have been dropped in places like the loop current.
  - A meeting participant added that monitoring devices can also be added to biodegradable materials.
- Can you tell us more about the dispersant degradation products that will be monitored under this plan?
  - Corexit is made up of surfactants and has a solvent delivery system to be able to promote contact of the surfactants with the target. There has been some look at what the degradation products are. What has been found is that product components have very short lives in the environments, and the degradation products have even shorter lives.
  - EPA developed a test for one component – Dioctyl Sulfosuccinate Sodium Salt (DOSS). We are applying that test now and seeing if we can track DOSS in seafood samples. This has been a successful element of the program, and we will be rolling it out soon, as an indicator of the dispersant. However, the DOSS itself is a common product in the environment and in human use. Whether we are tracking DOSS from the dispersants or as a pharmaceutical in the environment is an issue.
- BP should be providing samples of the material for isotope processing.

Document ID: 0.7.19.693.2

    - BP is not producing the chemical, and it is not a single product. It is largely a stockpile of drums, and there are a lot of unknowns. There are a lot of people interested in doing tests with samples of the dispersant.
    - BP (Pete Carriger): We have many barrels of oil, an archived set and chain-of-custody validated samples of oil from different vessels. A process is in place for obtaining samples. For those interested, write Carriger, and he will forward the request to the appropriate party. There is a form that would need to be completed by the requestor. There are also samples of Corexit available in totes.
- Does the nearshore sampling area in the plan include the inner estuary area of Lake Pontchartrain, etc.? If not, including the Lake Pontchartrain systems is recommended.
    - They are not currently being sampled, but once the tests are available, we will be happy to share them.
- Trying to determine what specific methods are being used (e.g., what polycyclic aromatic hydrocarbons [PAHs] are being measured for NRDA) is nearly impossible. Chemists would like this information.
    - The information on PAH chemistry is available online. We will revisit that page of websites – there are a lot of chemistry data out there.
- Will the presentation and implementation plan be available on the web? It has been three months since the Ocean Consortium proposed all of this. There appears to be a big gap between what's being done for mitigation and what the NRDA process is doing for damage assessment. How can you put together a budget without having that done?
    - The presentation is up on the NOAA website.
    - A lot of communication has occurred between now and the LSU meeting, but it has not been in this kind of forum. We are coming back to that now.
    - We are not specifically talking about NRDA. There are rules about how we collect data in a pre-assessment phase. If the process moves towards a legal proceeding against the responsible party, it becomes more difficult. There are many academics under contract for NRDA.
    - There is great interest in exploring some of these issues that are not NRDA and not response but are part of the broader science effort.
    - If the scientific community believes there is a wider piece that is not being addressed and people want a larger federal government presence, then they need to ask for it.
    - BP (Carriger): BP has committed $500 million over a ten-year period to academic research on oil and its long term effects in the Gulf of Mexico. As of today, BP already has granted $30 million of that, and many projects are being funded this way. There is another $10 million coming out under a press announcement today or tomorrow. The White House has indicated that BP should involve the States in the granting process for the rest of the funds. We're optimistic that we're close to a transparent method to allocate the remaining dollars. In that process, BP will have no vote on what is funded or published – it is a true grant, and it is moving forward.

Document ID: 0.7.19.693.2

- Agencies have been monitoring the GoM for decades. Is that work ongoing? If so, what is happening to those samples? Are they archived? If they are not doing that monitoring because of the response to the spill, when will they resume?
    - There are lots of biological sampling data available for baselines, and they have been posted on GeoPlatform, especially on abundance and morbidity of larvae, etc. When the well exploded, it was during the spring survey of bluefin tuna eggs and larvae in the area. We did not remove that vessel, but we asked the question of whether they should continue or be redirected to resource the spill. We have been trying to maintain the normal sampling to the extent possible. The Mussel Watch program is ongoing, with the test organism primarily being oysters. Nine different chemicals are tracked this way in this particular area. We have baseline data from that survey. We have historical information and we are going back out there now to test again.
- What is the extent of the impact of the surface oil in tropical populations in that region?
    - We have had a couple of cruises in the Florida straits and we have a regular sampling program off the Florida Keys.
    - Doing the complete kind of sampling we want to do is difficult. One of the biggest problems is that ecological impacts may occur even if the oil and dispersant are lower than our ability to detect. We, as well as many other people, have a nagging concern about whether we can detect what we need to detect. All of the data we have so far shows no obvious impact.
    - We found one case of far-field tar balls. We tracked that water into an eddy that has pinched off in the western Gulf of Mexico. When we revisited it, we did not find any tarballs.
- What are we actually measuring, and what is the split between sediment and water? What has been done in terms of deepwater sediment sampling?
    - There has not been a lot of deepwater sediment sampling. The University of South Florida has been gathering data using box-cores, for example. This has us thinking about whether we can do encounter-based sampling using fluorometry. One of the plan's proposals is to do this kind of thing by running AUV transects. A lot of mud was put down as part of Top Kill. We do not have access to the well site right now but at some point we will, and we would like to do some sampling there.
- How do we get started with sampling and be involved?
    - As we put together the sampling protocol, we can look for these kinds of opportunities to get people involved. E.g., if we have big enough ships to accommodate multiple investigators, that is something we want to do.
    - BP (Carriger): That is a marine operation, and we have a marine science coordinator from academia in the command post. There is the practical matter of getting someone onto a vessel, but we are ready to receive requests/proposals. Some visiting scientists have already been on the vessels.

Document ID: 0.7.19.693.2

- What is in the plan to enhance the needed development of theoretical models (more chemical than fluid dynamic) that predict where the oil goes, from the point of release up through the water column?
    - There are a number of operational sea-surface models available; there are six predictive models.
    - The critical issue being raised here is the subsurface piece. There are a couple of subsurface models that have been running. We have to combine the questions of the physical properties of oil with the hydrodynamic models.
    - Using the available data, we can take those models, reflect what was observed, and develop those models for long-term.
- Does the fact that the University of South Florida has not been mentioned mean that those data are invalidated?
    - The National Oceanographic Institute published a survey of chemistry samples. Whether the hydrocarbons found are the oil we are talking about or some other oil is still an open question.
- Have you considered adding a random sampling program to this plan (such as the current NOAA project that has collected 50 samples on a random grid offshore)?
    - Environmental Monitoring and Assessment Program (EMAP) is a long-standing program at EPA. They have published a number of products over the last five years, and they are happy to make available that information.
    - In the nearshore sampling in the Gulf, a random approach was used. On the continental shelf, we have a very prolific amount of data, and we used a justified approach.
- Has there been any microbial gene sequencing that can be used, given that microbial diversity may be a proximate indicator of some phenomena?
    - If we are going to collect all of these water samples, it would be a shame not to use sequencing on them.
- What is the role of the Department of Energy in responding?
    - They have been extensively involved, particularly in cleanup.
- To what extent is methane an issue in your sampling plan (John Kessler from Texas A&M has a large methane study)?
    - There have been concerns about high levels of methane apparently along with the droplets of oil. We have been primarily concerned with outcomes of hydrocarbons, and it's a little more difficult to track methane. But we are not ignoring it, and we are reaching out to look at that. NSF has two ships out looking at this now.
- We should consider positive aspects of dispersants as well. If we had not used dispersants, then we might have had a much more serious situation.
    - The efficacy of using dispersants is a longer term research program, and we need to use this opportunity for such research. There are concerns about creating hypoxia. We had very little science to draw on when we looked at the potential use of dispersants.
    - We spend a lot of time planning to respond to spills, and we would like to have more science to drive future response decisions about dispersants.

Document ID: 0.7.19.693.2

- Early on, some people thought oil was going to get into the current, but that was not the case. People were also concerned about oxygen sag. The question is, did we get lucky? The mass of oil there was not in our control, but the rate of dispersant application was.
- BP (Carriger): People complain and want to know where the data are. But the good thing is that there is a huge amount of data. It is difficult to get a handle on such huge data sets, but once we are able to integrate all this information, we can look at how it fits together.

- Is there a plan for how to pull together all available pre-spill data, since there has never before been a need to collate it for a response like this?
  - The Ecological Society of America and the American Fisheries Society have both put out calls for ecological baseline data. That information will allow us to look at some priorities for piggy-backing on other surveys.
- What do we know about what goes along with produced water from Deepwater Horizon?
  - We understand the chemistry. In this situation there was very little water.
  - BP (Carriger): In the discovery phase, there was no oil-water contact. There was no free water in the well. When we were producing through the enterprise and Q4000, a large majority of those days we had zero percent solids and other stuff, and later only 1 percent produced water. It's not a major part of the fluids that were put into the environment.
- People are developing new methods and new tools, and they are ready and willing to help.
  - There is lots of innovation going on, and this spill has witnessed the maturing of a number of technologies. Gliders are an example – the addition of fluorometers, oxygen meters, etc., has matured very quickly. Another example is ACDPs (Acoustic Current Doppler Profilers).
- What about the concern that migratory fish can disseminate oil microbes into other areas?
  - There have not been any PAH levels that have exceeded the standard, including in the sampling of tunas in the Gulf of Mexico. So far we have not seen any evidence that animals that have come into contact with oil are above detectable levels for any threshold.
- Could we use the pre-spill daily naval sampling data to determine changes due to the oil spill?
  - Those programs have dropped off somewhat lately. However, there are a lot of archived data available.
- What are the ideas for how to pull all these data together?
  - There have been a lot of comments about whether all of these data are coming in ways that scientists can use. We encourage academic collaboration with us on that. We see the need for more comprehensive reports, and we are planning for that. We need to do more with existing data. We have a science community here. If lack of funding is preventing full data analysis, then we need to figure how to address it.

Document ID: 0.7.19.693.2

- Have you considered creating funds for undergraduate research, an opportunity to get a lot of output for little input?
    - Yes, and this event will likely be the basis for all sorts of coursework. It will be good to use this as a way to interest people in science in general and teach the scientific method. There had been a small community of people working on this, but the community has become much bigger.
- Is the plan completely separate from the shoreline assessment? Does it inform the nearshore sampling process?
    - Yes to both. We do use the mapping to identify the areas where we believe there may be an issue. A lot of effort is needed to make sure we are to coordinating closely with our state partners on this.

Document ID: 0.7.19.693.2

Received(Date): Mon, 04 Oct 2010 09:58:37 -0400
From: Justin Kenney <Justin.kenney@noaa.gov>
Subject: Revised NOAA BP talking points
To: "Deepwater Staff (dwh.staff@noaa.gov)" <dwh.staff@noaa.gov>,"DEEPWATER Leadership (dwh.leadership@noaa.gov)" <DWH.Leadership@noaa.gov>,_HDQ Oil Spill <Oil.Spill@noaa.gov>

As promised, enclosed and below are revised NOAA talking points based on Dr. Lubchenco's recent speech in New Orleans. As this is a living document, I welcome any comments.

Regards,

Justin Kenney

NOAA Director of Communications & External Affairs

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NOAA Responds: www.noaa.gov

NOAA BP Deepwater Horizon Talking Points

October 2010

· **Although the oil has stopped flowing, NOAA has not stopped working.**

o NOAA is, by law, the nation's lead science agency for oil spills.

o NOAA's role in Deepwater Horizon is five-fold:

§ to conduct and share science,

§ keep seafood safe,

§ protect wildlife and habitat,

§ assess damage, and

§ restore the natural resources injured as a result of the spill.

o And, we are now engaged in a comprehensive, collaborative effort to monitor the fate of oil and dispersants sub-surface, adding to the array of samples already in hand. Federal and academic scientists are working together to understand the fate and effects of the oil and dispersants under the surface and at the bottom of the sea.

· **Good science underpins all that we do.**

o Our job for oil spills is to use the best science and create the tools needed for responders to make on-the-ground decisions in real-time during the crisis, and make smart decisions later, for example for restoration.

o From the early hours after the spill began, science has guided our efforts.

· **NOAA's mission in the Gulf is not just about data and numbers. It is about people.**

o Restoring the Gulf means restoring the entire Gulf ecosystem, including people's lives and livelihoods.

o There is no separation between the well-being of Gulf residents and the health of the Gulf.

o NOAA is deeply committed to understanding the impact of this spill on the health of the Gulf and the millions of people who depend on it for their lives and livelihood

o And we are committed to full restoration of the Gulf and its people.

· **Dilute and disperse do not mean benign.**

o Though much of the oil beneath the surface was dispersed into droplets less than a diameter of the human hair, and although this dispersed oil was measured in concentrations of parts per million to parts per billion, ***dilute and dispersed do not mean benign***.

o We continue to have grave concerns about the impact that this subsurface oil may have had on vulnerable species and young stages of diverse marine life.

· **Assessing the damage of this spill takes time, but restoration can begin now.**

o In looking to assess the impacts of this spill, we cannot look only at each species in isolation. We cannot look only now. We must ask the hard questions of how this spill impacts this and future generations of species within the ecosystem, and how those changes in turn affect the ecosystem service provided to the people of the Gulf.

o This cannot be accomplished in an instant. It will take time.

o And because full recovery can take a very long time, ***we cannot wait*** for assessment to be completed before restoration must begin.

· **Eat. Swim. Fish.**

o NOAA continues to be vigilant in pursuing good science. And we are sharing that knowledge broadly.

o Our goal is simple: enable people to eat, swim, and fish safely in the Gulf. Eat, swim and fish with joy.

Received(Date): Wed, 13 Oct 2010 15:21:36 -0400
From: "william.conner" <William.Conner@noaa.gov>
Subject: Status of Sub-Surface Monitoring Plan
To: DWH leadership <DWH.Leadership@noaa.gov>

All -

Here is the status of efforts to get OMB approval of the Sub-Surface Monitoring Plan:

- All comments received from OMB on October 5 have been addressed and changes coordinated through the Unified Area Command (UAC).

- In addition, the UAC has recommended a number of other changes. Most of these are small corrections or clarifications, but there are 4 issues that relate to the scope of the monitoring work. These changes result from USCG legal review that rests, in large part, on the scope of activities that can be reimbursed as response. These recommended changes are:

    - Elimination of metals analysis from the "offshore areas" sample work up.
    - Gaining an understanding of any sedimentation issues by coordinating with other other non-response sedimentation studies to explain potential oil deposition or evaluate attenuation.
    - Removing provisions for Microtox testing in offshore areas. This would still be done for deep areas, as agreed during the last round of changes (codification of an earlier change that we agreed to).
    - Removing benthic community analysis of deep water sediment samples from the scope of this program, but making sediment samples available for work funded outside the sub-surface monitoring program. This is proposed because benthic community analysis is not needed to meet the guidelines listed in the plan.

Despite these recommendations, a comprehensive body of work is still being conducted to implement the NIC monitoring directive. This work will provide a firm foundation for documenting the present occurrence of oil and dispersants over large areas of the Gulf of Mexico, and a basis for future NRDA or broader scientific studies. Field work continues while these last issues are being resolved. Although final details are still being worked out, it is my expectation that Steve, Bob and I will be recommending that NOAA accept all of the changes proposed by the UAC. I will be able to provide more detail on the rationale for these changes and a final draft plan tomorrow morning. After reviewing the changes to the plan, we will also need to discuss the final clearance track for the plan. The UAC has requested that they be allowed to coordinate the final review because the FOSC will ultimately be required to approve the plan and the funding.

Please keep an eye out for more information tomorrow morning.

Bill
--
William G. Conner, Ph.D.
Chief, HAZMAT Emergency Response Division
NOAA Office of Response and Restoration

Phone: 301-713-3038 (190)

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Subject: Fwd: Scientific literature on Oil and Oil spills
From: John Iliff
Date: Thu, 02 Sep 2010 12:43:43 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject: Scientific literature on Oil and Oil spills
Date: Mon, 10 May 2010 11:17:28 -0700
From: Milena Viljoen <Milena.Viljoen@noaa.gov>
Organization: NOAA Restoration Center
To: Bob Pagliuco <Bob.Pagliuco@noaa.gov>, Leah Mahan <Leah.Mahan@noaa.gov>, Kit Crump <Kit.Crump@noaa.gov>, Joe Pecharich <Joe.Pecharich@noaa.gov>, Jennifer Boyce <Jennifer.Boyce@noaa.gov>, Gabrielle Dorr <Gabrielle.Dorr@noaa.gov>, Eric Co <Eric.Co@noaa.gov>, Dave Witting <David.Witting@noaa.gov>, Patrick Rutten <Patrick.Rutten@noaa.gov>, Natalie C-Manning <Natalie.C-Manning@noaa.gov>, Natalie Badrei <Natalie.Badrei@noaa.gov>, Matt Parry <Matthew.Parry@noaa.gov>, Vanessa Nalle <Vanessa.Nalle@noaa.gov>, Rachel Brittin <Rachel.Brittin@noaa.gov>, Courtney Groeneveld <Courtney.Groeneveld@noaa.gov>, John Iliff <John.Iliff@noaa.gov>

Hi all,
I get this Marine Science Review, and a recent edition is specifically dedicated to literature on oil spills and the Gulf. Thought it might be of interest to many of us....

"In order to support the response efforts to the ongoing oil spill in the Gulf of Mexico SeaWeb
has assembled relevant literature from the last three decades which provide insights not only
to the impact of oil on the marine and coastal environment in the Gulf of Mexico, but high-
lights experiences, issues and research from similar oil spills in other regions of the world."

Happy Monday,
Milena

--
Milena Viljoen

Marine Habitat Restoration Specialist
NOAA Restoration Center

6010 Hidden Valley Road, Suite 101
Carlsbad, CA 92011

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Subject: Marine Science Review 371: Special Edition - Oil and Oil Spills - Gulf of Mexico
From: SeaWeb
Date: Fri, 07 May 2010 12:40:52 -0400 (EDT)
To: Milena.Viljoen@noaa.gov

Backtotop

Header: Marine Science Review

Marine Science Review 371: Special edition

Oil and oil spills - the Gulf of Mexico

Please click here to download the full edition (pdf) of Marine Science Review 371

In order to support the response efforts to the ongoing oil spill in the Gulf of Mexico SeaWeb has assembled relevant literature from the last three decades which provide insights not only to the impact of oil on the marine and coastal environment in the Gulf of Mexico, but highlights experiences, issues and research from similar oil spills in other regions of the world. Please let us know if there are relevant papers to add to this list. We will update this review and make it available at: http://www.seaweb.org/resources/msr.php

SeaWeb will produce special editions of the Marine Science Review in response to significant ocean events or issues to ensure that any activities, efforts and media are underpinned by sound science.

In this review:

A. Impacts on human health
B. Impacts on marine and coastal birds
C. Impacts on marine mammals
D. Impacts on sea turtles
E. Impacts on fish and invertebrates
F. Impacts on coral and coral reefs
G. Impacts on mangroves, salt marshes and seagrasses
H. Previous oil spills
I. Impacts of hydrocarbon production in the Gulf of Mexico
J. Future considerations

- **A. Impacts on human health**
  - Review on the effects of exposure to spilled oils on human health.
  - Symptomatic profile and health-related quality of life of persons affected by the

Prestige catastrophe.

- **B. Impacts on marine and coastal birds**
  - Assessing the impact of major oil spills on seabird populations.
  - Pathological features in marine birds affected by the *Prestige*'s oil spill in the north of Spain.
  - Survival and dispersal of oiled brown pelicans after rehabilitation and release.
  - Consequences of petrochemical ingestion and stress on the immune system of seabirds.
  - Birds and polycyclic aromatic hydrocarbons.
  - An evaluation of marine bird population trends following the *Exxon Valdez* oil spill, Prince William Sound, Alaska.
- **C. Impacts on marine mammals**
  - Synthesis of effects of oil on marine mammals.
  - Ongoing population-level impacts on killer whales *Orcinus orca* following the 'Exxon Valdez' oil spill in Prince William Sound, Alaska.
- **D. Impacts on sea turtles**
  - Oil and sea turtles: Biology, planning, and response.
- **E. Impacts on fish and invertebrates**
  - A perspective on the toxicity of petrogenic PAHs to developing fish embryos related to environmental chemistry.
  - Chronic sublethal effects associated with branched alkylbenzenes bioaccumulated by mussels.
  - Toxicity of seawater and sand affected by the *Prestige* fuel-oil spill using bivalve and sea urchin embryogenesis bioassays.
  - Comparative toxicity of oil, dispersant, and oil plus dispersant to several marine species.
  - Long-term biological effects of petroleum residues on fiddler crabs in salt marshes.
  - Toxic effects of unresolved complex mixtures of aromatic hydrocarbons accumulated by mussels, *Mytilus edulis*, from contaminated field sites.
  - Effects of exposure to petroleum hydrocarbons upon the metabolism of the common sole *Solea solea*.
- **F. Impacts on coral and coral reefs**
  - Oil pollution on coral reefs: A review of the state of knowledge and management needs.
  - Oil spills in coral reefs: Planning and response considerations.
  - Short and long term toxicity of crude oil and oil dispersants to two representative coral species.
  - Toxicity of third generation dispersants and dispersed Egyptian crude oil on Red Sea coral larvae.
  - Effects of chronic oil-sediment pollution on the reproduction of the Caribbean reef coral *Siderastrea siderea*.
  - Short-term ecological consequences of a major oil spill on Panamanian subtidal reef corals.
  - Injury, regeneration and growth of Caribbean reef corals after a major oil spill in Panama.
- **G. Impacts on mangroves, salt marshes and seagrasses**
  - Oil spills in mangroves: Planning and response considerations.
  - Long-term consequences of residual petroleum on salt marsh grass.
  - Nonnutrient anthropogenic chemicals in seagrass ecosystems: Fate and effects.
- **H. Previous oil spills**
  - Ecological effects of a major oil spill on Panamanian coastal marine communities.
  - The fate of *Amoco Cadiz* oil.
  - The impact of the "Sea Empress" oil spill.
  - The *Prestige* oil spill and its economic impact on the Galician fishing sector.
  - Estimated costs and admissible claims linked to the *Prestige* oil spill.
  - Long-term ecosystem response to the *Exxon Valdez* oil spill.

    - Long-term persistence of oil from the *Exxon Valdez* spill in two-layer beaches.
- **I. Impacts of hydrocarbon production in the Gulf of Mexico**
    - A review of ecological impacts of oil and gas development on coastal ecosystems in the Mississippi Delta.
    - Evidence of regional subsidence and associated interior wetland loss induced by hydrocarbon production, Gulf Coast region, USA.
- **J. Future considerations**
    - Trouble on oiled waters: Lessons from the *Exxon Valdez* oil spill.
    - An international comparison of governmental disclosure of hydrocarbon spills from offshore oil and gas installations.
    - **Ensuring persistence of marine reserves: Catastrophes require adopting an insurance factor.**

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Back to top

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Subject: Fwd: [Fwd: SITREP DEEPWATER HORIZON - 26 APRIL]
From: John Iliff
Date: Thu, 02 Sep 2010 12:45:12 -0400
To: Jeff Shenot

FOIA #2010-00377
-------- Original Message --------
Subject:[Fwd: SITREP DEEPWATER HORIZON - 26 APRIL]
Date: Tue, 27 Apr 2010 08:05:21 -0400
From: Brian Hostetter <Brian.Hostetter@noaa.gov>
To: John Iliff <John.Iliff@noaa.gov>, John Collins <John.Collins@noaa.gov>, Tony Penn <Tony.Penn@noaa.gov>

FYI.

-------- Original Message --------
Subject:SITREP DEEPWATER HORIZON - 26 APRIL
Date: Tue, 27 Apr 2010 08:00:47 -0400
From: Brian Hostetter <Brian.Hostetter@noaa.gov>
To: Chris Doley <Chris.Doley@noaa.gov>, roy crabtree <Roy.Crabtree@noaa.gov>, Buck Sutter <Buck.Sutter@noaa.gov>, kim amendola <kim.amendola@noaa.gov>
CC: Leslie Craig <Leslie.Craig@noaa.gov>

Remotely Operated Vehicles (ROVs) continue to work on triggering the blowout preventer to contain the leak, other rigs are en route in case relief wells are needed. An underwater oil collection device for
trapping and collecting escaping oil is being designed and fabricated. However, collection devices have not been used at this depth (approx. 5000ft). Efforts are now focused on: gathering more information about the spill (amount, fate and effects), plans for possible undersea containment, drilling relief wells, maximizing oil recovery and readying for shoreline assessments. The plan for attacking the spill has the following elements:

<!--[if !supportLists]--> ▪ <!--[endif]--> Try to activate the blow-out preventer (BOP) using ROVs – could stop leaks in several days, if successful

<!--[if !supportLists]-->▪ <!--[endif]--> Use an undersea dome to contain leaking oil, rigged by ROVs – has not been tried this deep before

<!--[if !supportLists]-->▪ <!--[endif]--> Drill relief wells which could then be plugged – this process could take several months

<!--[if !supportLists]-->▪ <!--[endif]--> Aggressive skimming and dispersing of oil on the surface – ongoing

<!--[if !supportLists]-->▪ <!--[endif]--> Assessment and protection of coastal resources at risk – thousands of feet of oil containment and deflection boom are ready to deploy, experts are on-scene and en route

Aerial observers did not see whales or dolphins today, but marine mammal issues are very much a concern for the Unified Command. NOAA's National Marine Fisheries Service (NMFS) will provide data, plan surveys, and offer protocols. This year has seen a marked increase in natural strandings of marine mammals in the Gulf of Mexico which will make oil impacts more difficult to assess.

Weather forecasts from NOAA's National Weather service indicate winds from the north – which helps keep oil away from shoreline – until Wednesday with a shift to the southeast thereafter.

Aircraft applied more oil dispersant today, but 15-20 kt winds and 4-6' seas made oil recovery on the surface more difficult.

The latest NOAA oil-spill trajectory analysis does not indicate oil coming to shore over the next 3 days; this assumes that the rate of oil release does not increase and that the weather remains as forecast.

NOAA Roles: NOAA is a vital part of the massive response effort on the Deepwater Horizon incident. Many personnel are on-scene and many more are engaged remotely, as follows:

Office of Response and Restoration (OR&R)

- Scientific support to the U.S. Coast Guard and Unified Command

Emergency Response Division (ERD)

- Predict where the oil is going and its effects
- Overflight observations and mapping
- Physical and chemical properties of oil
- Data and information management
- Identify resources at risk
- Recommend appropriate clean-up methods

Assessment and Restoration Division (ARD)

- Plan for assessment of injuries to natural resources
- Coordinate with state and federal resource trustees
- Recommend habitat restoration techniques
- Water column, tissue, and sediment sampling strategy

National Weather Service

<!--[if !supportLists]-->▪ <!--[endif]-->Spot weather forecasts including marine and aviation

National Environmental Satellite, Data, and Information Service (NESDIS)

<!--[if !supportLists]-->▪ <!--[endif]-->Provide imagery for spill trajectory forecasts

National Marine Fisheries Service (NMFS)

<!--[if !supportLists]-->▪ <!--[endif]-->Provide scientific support for issues related to marine mammals, sea turtles, and fishery resources

National Ocean Service

<!--[if !supportLists]-->▪ <!--[endif]-->Public Affairs support to Joint Information Center

--
E. Brian Hostetter
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Subject: Fwd: NOAA, NMFS, OHC and the Deepwater Horizon event
From: John Iliff
Date: Thu, 02 Sep 2010 12:45:29 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject:NOAA, NMFS, OHC and the Deepwater Horizon event
Date: Thu, 29 Apr 2010 10:18:59 -0400
From: Pat Montanio <Pat.Montanio@noaa.gov>
To:_NMFS HQ HC ALL <NMFS.HQ.HC.ALL@noaa.gov>

All,

Below is a note circulated by David Kenendy regarding the Deepwater Horizon event and NOAA's response. Within NMFS, we are supporting this effort in a variety of ways - from regional and science center capabilities to our ongoing partnership under DARRP.

Brian Pawlak has been appointed as the NMFS liaison to NOAA and NOS senior leaderships for spill response information and action. Captain Gallagher and Jenni Wallace are the F points of contact for requests for information. If you receive a tasker or request from outside this chain, please bring them all into the loop. It is very critical that all relevant information be coordinated and consistently delivered within NOAA, and all media communication regarding the spill should be directed to Public Affairs.

Given the magnitude (as well as uncertainty) of this event, it will require considerable redirection of resources across NOAA. This new assignment will, at least initially, require Brian's full attention. Therefore, I have asked Dean Smehil to serve as Acting Deputy for the Office of Habitat Conservation in the interim.

We all hope that this oil spill can be brought under control relatively quickly, but it is very possible that this will require a long term investment on NOAA's part. Many of you will be asked to contribute in different ways - whether directly or indirectly by covering other assignments. I thank you all in advance, as this is a significant issue for NOAA and the environment.

PatM

-------- Original Message --------
Subject: NOS is playing a crucial role in the Deepwater Horizon event
Date: Thu, 29 Apr 2010 05:51:17 -0400
From: David.Kennedy@noaa.gov
To: _NOS All Hands <nosallhands@noaa.gov>

good morning everyone,

The ongoing oil spill resulting from the Deepwater Horizon poses a grave threat to coastal communities and ecosystems in the Gulf region---and to the national economy. The purpose of this message is to inform you

about NOS's role in the response to this incident, recognize the remarkable work of our staff, and to provide you an update on the status of the spill and next steps.

First, I want to recognize the exceptional performance of NOS staff responding to the incident. Dozens are working very long hours to continue gathering information about the spill, plan for containment, and prepare for environmental assessment and response. Eighteen staff members from the Office of Response and Restoration are on site at the command center and more than two dozen others are involved off site. After more than 20 years of being involved with response efforts including serving as science coordinator for the Exxon Valdez spill, I know firsthand how seriously our responders take their jobs and how committed they are to supporting sound, timely decision making. My deep appreciation goes out to them for their work. And I know this is only the beginning of this effort.

As you know, last week, there was an explosion that resulted in a massive fire on the Deepwater Horizon, a mobile offshore drilling unit in the Gulf of Mexico about 50 miles offshore of Louisiana. Sadly, eleven people who were on the rig at the time of the explosion are still not accounted for.
After the rig burned for hours, it capsized and sank into the Gulf on April 22. The undersea oil well is leaking oil at an estimated rate of 1,000 barrels a day at a depth of 5,000 feet.

So far, attempts to use remotely operated vehicles to trigger a series of valves to stop the leak have been unsuccessful. Construction has begun on a collection dome that will be deployed to the sea floor to collect and funnel oil as it escapes from the well, a method that has never been tried at this depth before. The first rig to be used for drilling a relief or cut-off well arrived on the scene and several more are planned. A relief well would take several months to complete.

Staff members from the Office of Response and Restoration (ORR) in the Emergency Response Division have been providing scientific support to the U.S. Coast Guard and the Unified Command that is coordinating response operations. This support includes predicting where the oil is going and its effects, identifying resources at risk, and planning response and over flight operations. Yesterday, NOAA's Assessment and Restoration Division (ARD) brought together more than 20 federal and state natural resource trustees to discuss natural resource damage assessment efforts. ARD is evaluating concerns about potential injuries of oil and dispersants to fishes, human use of fisheries, marine mammals, turtles, and sensitive resources.

In addition, the National Weather Service is providing weather forecasts, including marine and aviation. The Office of Oceanic and Atmospheric Research is advising on airborne dispersion modeling and the National Data Buoy Center data is also being used in oil trajectory forecasting. The National Marine Fisheries Service is addressing issues related to marine mammals, sea turtles, and fishery resources. The National Environmental Satellite, Data, and Information Service is providing analysis of the oil spill using experimental methods with satellite imagery. The Office of Marine and Aviation Operations is providing aircraft support for overflights that are being conducted on a near daily basis.

The impact of this spill will be recorded alongside historic events such as the Exxon Valdez oil spill and Hurricanes Katrina and Rita. During

those events, NOAA responded to extraordinary adversity with extraordinary achievement. Our response in this case will require the same level of resolve.
Dr. Lubchenco asked me to serve as the lead for NOAA's response to this incident. Over the coming weeks and months, we will be calling on colleagues from across NOAA and within NOS to supplement these efforts. I will keep you and your program directors informed of the expertise and skills needed from NOS.

In the meantime, you can learn more about NOAA's ongoing response through the following resources:
- ORR's Incident News: http://www.incidentnews.gov/incident/8220
- ORR's Emergency Response Information: http://response.restoration.noaa.gov/ (Click on the link in the upper right hand corner of the page)

dmk

F-Video Notes – May 11, 2010

ACTION ITEMS

Facilities Reports Due – (ACTION ALL: 5/15/2010) - Each FMC must complete the assigned Integrated Facilities Inspection Program (IFIP) survey questionnaires by the end of this week (5/15/10). The respondents to the questionnaires should access the VFA system to complete the surveys and check the status of completion.

NMFS Records Management Training - (ACTION ALL SUPERVISORS: 6/25/2010) - As an additional step toward improving Agency records management, all NOAA Fisheries supervisors are now required to complete a one hour NMFS Records Management training by June 25, 2010. You access this course by going to the Commerce Learning Center at NOAA web site: https://doc.learn.com/noaa. This class will be provided via a Webinar with conference call-in and will be offered four times a week on Mondays and Thursdays at 10:00 and 2:00 EST, beginning on Thursday, May 13, at 2:00 EST. Once you have logged into the Commerce Learning Center, you can register for the NMFS Records Management class under Live Training Events. An automatic enrollment message will provide information for the Webinar and conference call dial-in.

All NMFS supervisors are to have completed this one-hour overview class by June 25, 2010. Additional and more in-depth Records Management training will be offered soon and will be coordinated with the National Archives and Records Administration. Watch for more information in the coming weeks.

NOAA Rotational Assignment Program (NRAP) – (ACTION ALL: 5/21/2010) - NRAP is an agency-wide employee development program that offers employees the opportunity to compete for short-term rotational assignments in NOAA Line/Corporate Offices. Applications must be submitted online by Friday, May 21, 2010. Learn more about the NRAP program and view submission guidelines.

NOAA Employee Safety and Environmental Awareness Course for 2010 - (ACTION ALL: 5/30/2010) - All NOAA employees are required to complete the annual Employee Safety course by May 30, 2010. You may access this course by going to the Commerce Learning Center at NOAA web site: https://doc.learn.com/noaa; click on 2010 NOAA Safety Awareness to launch the course.

INFORMATION ITEMS

National Geographic's BioBlitz at Biscayne National Park - Staff from the Southeast Science Center participated in BioBlitz 2010 at Biscayne National Park in Miami, FL. Part scientific endeavor, part festival and part outdoor classroom, the event brought together more than 100 leading scientists and naturalists from around the country, hundreds of public volunteers, and nearly 1,000 students (mainly grades 5-12) from the greater Miami area. On April 30, participants combed the park, observing and recording as many plant and animal species as possible in 24 hours. Inventory activities included counting fish on snorkeling trips, catching insects by day and night, spotting birds,

exploring mangroves, netting aquatic organisms, and observing and using technology to better understand the diverse ecosystems of this unique national park. Read more about the event and Biscayne's biological inventory.

Chesapeake Executive Order Strategy released May 12 - The new federal strategy for the Chesapeake region, released this week, focuses on protecting and restoring the environment in communities throughout the 64,000-square-mile watershed and in its thousands of streams, creeks and rivers. The strategy includes using rigorous regulations to restore clean water, implementing new conservation practices on 4 million acres of farms, conserving 2 million acres of undeveloped land and rebuilding oysters in 20 tributaries of the bay. To increase accountability, federal agencies will establish milestones every two years for actions to make progress toward measurable environmental goals. These will support and complement the states' two-year milestones. Click here to view the new strategy.

2009 Status of U.S. Fisheries Report to Congress Released - This week Congress received the annual report on stock status and changes in U.S. fisheries. The report is generated by the NMFS regional offices and science centers and is based on the most recent stock assessments as of December 31, 2009. Two hundred fifty stocks or stock complexes have known overfishing determinations: 212 (85%) are not subject to overfishing and 38 (15%) are subject to overfishing. These percentages are a slight improvement from last year's report, in which 84 percent were not subject to overfishing and 16 percent were, and reflects new assessments that have added to the number of stocks with known overfishing determinations as well as stocks no longer subject to overfishing. Read the full report text and find more information here.

Public Input Period for NOAA Aquaculture Policy Extended to May 28 - On September 3, 2009, Dr. Lubchenco announced plans to develop a new NOAA Aquaculture Policy. The policy will provide a foundation for sustainable aquaculture that will create employment and business opportunities in coastal communities; provide safe, sustainable seafood; and complement NOAA's comprehensive strategy to maintain healthy and productive marine populations, species, and ecosystems and vibrant coastal communities. The public input period began on April 6 and has been extended to midnight (EDT) on May 28, 2010. View public input and submit your own suggestions for the policy.

New Interpretive Buoy Deployed in Chesapeake Bay - NOAA will deploy the next "smart buoy" on the upper Potomac River, just south of the Woodrow Wilson Bridge, on May 14. NOAA's Chesapeake Bay interpretive buoys provide boaters and kayakers, via cell phone, real-time weather and environmental information like wind speed, temperature, and wave height, as well as a short history lesson about Captain John Smith's adventures during his 1608 voyage that mapped the Bay. The buoys are located along the Captain John Smith Chesapeake National Historic (water) Trail. This is the eighth buoy in the system. Learn more about the buoys and view the data.

Subject: Fwd: [Fwd: Dr.L in the War Room]
From: John Iliff
Date: Thu, 02 Sep 2010 12:43:24 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject:[Fwd: Dr.L in the War Room]
Date: Tue, 04 May 2010 09:10:27 -0400
From: Chris Doley <Chris.Doley@noaa.gov>
To: Brian T Pawlak <Brian.T.Pawlak@noaa.gov>
CC: Pat Montanio <Pat.Montanio@noaa.gov>, John Iliff <John.Iliff@noaa.gov>

Brian - For your situational awareness. Jen Steger was asked to participate in a briefing for Dr. L during her visit to the war room in Sand Point, WA.

John - We should let Haddad/Penn know that Dr. L. is very interested in a follow-up on the TWIG structure that is being developed and efforts to coordinate across the Feds and States.
Chris

-------- Original Message --------
Subject: Dr.L in teh War Room
Date: Tue, 04 May 2010 05:54:35 -0700
From: Jennifer.Steger@noaa.gov
To: Chris.Doley@noaa.gov
CC: John.Iliff@noaa.gov

G'morning Chief

Went well with Dr.L necessary focus on response but the DARRP message (ARD & RC) was heard and applauded. The segway you suggested from previous briefings re: ARRA and CRP and where RC was born was helpful good advice - Thanks You. Doug Helton and Amy Merton named the Restoration Center specifically and all the NOAA lines as being amazing partners.

Doug/Debbie Peyton (and team) illustrated modelling techniques, software and products -all of which are impressive. There was a significant discussion about using google as the platform and making the trajectories public. Dr. L said she would talk with fiends at google to implement. She committed to talking with NASA re: use of their planes (formerly U2s?) Doug also discussed the basics regarding way the war room "works" the new command centers that are being established and the staffing issues associated with the command post establishment.

Dr. Jane asked many questions about baseline - who is collecting it (esp larvae),who will be using it and how. Where are the samples taken, stored and analyzed...etc..

Getting the structure of the TWGs to her with and explanation of how it will work is extremely important now - she asked many questions

regarding how NOAA was coordinating with other Agencies/States/Locals to avoid duplication of effort and maintain an efficient and effective baseline sampling strategy.

She also concentrated (grilled) the NWFSC on what is known and not known about dispersants in the water column and at depth including (the result of using them at the source of leak 5000 feet down) what the long term effects are -John Stein had few answers. NWFSC's Nat Stoltz is on scene - John Stein highlighted NWFSC as experts in NRDA procedures the science support for DARRP cases.

The evening was a fast paced but relaxed in nature and familiar in tone. The discussion was well choreographed and exectuted. Not a bad evening in the War Room.
the end

jj

Subject: Fwd: [Fwd: Request for oyster biology assistance]
From: John Iliff
Date: Thu, 02 Sep 2010 12:42:43 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject:[Fwd: Request for oyster biology assistance]
Date: Fri, 30 Apr 2010 08:30:17 -0400
From: Chris Doley <Chris.Doley@noaa.gov>
To: John Iliff <John.Iliff@noaa.gov>
CC: Pat Montanio <Pat.Montanio@noaa.gov>, Perry Gayaldo <Perry.Gayaldo@noaa.gov>

FYI.Â We made need a short response to Mr. Cake's request reassuring him of our knowledge and inclusion of oyster resources in our activities.

-------- Original Message --------
Subject: Request for oyster biology assistance
Date: Thu, 29 Apr 2010 14:56:56 -0700 (PDT)
From: Ed Cake <ed.cake@yahoo.com>
To: Pat Montanio <Pat.Montanio@noaa.gov>, Chris Doley <Chris.Doley@noaa.gov>
CC: Chris Lagarde <chris.lagarde@mail.house.gov>, Ron Dugas <dugasrj@eatel.net>, John Tesvich <john@ameripure.com>, Tom McIlwain <tmcilwain@cableone.net>, John Supan <jsupan@lsu.edu>, John Cirino <crow@datasync.com>, Al Sunseri <asunseri@bellsouth.net>

NOAA/NOS
Assessment and Restoration Division
Mr. Chris Doley
Restoration Center Director
E-mail: chris.doley@noaa.gov
Â Â Â Â Â and
Mr. Pat Montanio
Office Director
E-mail: pat.montanio@noaa.gov
Â
RE: ***Deepwater Horizon*** Incident, Gulf of Mexico
Â
If one takesÂ the information reprinted belowÂ as "gospel," then NOAA fails to realize that one of the most importantÂ species of concern in LouisianaÂ is the eastern oyster, ***Crassostrea virginica***.Â And yet no mention is made of the oyster resources that are at risk when the ***Deepwater Horizon*** oil spill reaches the coastal waters ofÂ Louisiana.Â Are thereÂ any experienced oyster biologists on-scene to supportÂ NOAA's oil-spill response and restoration team?
Â
If not, may I be so bold as to suggest thatÂ NOAA's Assessment and Restoration Division dispatch an experienced oyster biologist to its command center here on the Gulf Coast to "advise" federal officials and others on the importance of the Louisiana oyster industry and the oyster resources that sustain that industry.Â At this point, that industry seems to be the forgotten, red-headed stepchild!Â
Â
I hereby specifically request and urge that Dr. Kay McGraw, a staff oyster biologist in NOAA's Restoration Center be dispatched to the Gulf Coast region ASAP.Â Dr. McGraw is an experienced oyster biologist who conducted her doctoral research on the oysters resources of Horn Island, a component of Gulf Islands

National Seashore -- one of the islands in the direct path of the shoreward migrating ***Deepwater Horizon*** oil spill.Â She alsoÂ conducted oyster biology research throughout the Mississippi Sound area andÂ is very familiar with the oyster resources of the Gulf Coast and Louisiana.Â Dr. McGraw's presence would certainly aid the on-scene NOAA/NMFS staff with oyster-related issues and assureÂ the oyster industry that NOAAÂ also cares about oysters.
Â
Please accept this e-mailÂ message as an official request toÂ dispatch Dr. McGraw to the Gulf Coast posthaste to signify to the Gulf Oyster Industry in general and the Louisiana Oyster Industry specifically that NOAA and NMFSÂ are ready, willing, and able to do what is necessary to protect the oyster resourcesÂ from the potential impacts of the ***Deepwater Horizon*** oil spill.Â Thank you.
Â
Respectfully requested,
Â
Â Â Â Â Â Â Â Â Â Â *Ed Cake*
Â
E.W. "Ed" Cake, Jr., Ph.D.
Biological Oceanographer
Certified Oyster Biologist
Gulf Environmental Associates
Ocean Springs, MS
E-mail: **ed.cake@yahoo.com**

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Reference is made to the following NOAA information:
Â
Deepwater Horizon Incident, Gulf of Mexico

URL: http://response.restoration.noaa.gov/topic_subtopic_entry.php?RECORD_KEY%28entry_subtopic_topic%29=entry_id,subtopic_id,topic_id&entry_id(entry_subtopic_topic)=809&subtopic_id(entry_subtopic_topic)=2&topic_id(entry_subtopic_topic)=1Â
Â
Updated each evening
Situation: Wednesday 28 April 2010
Â
Workers finished fabricating the containment chamber portion of the collection dome that will be deployed to the sea floor to collect oil as it escapes from the well.Â Work will now begin on the piping system that brings the oil to the surface for collection; this method has never been tried at this depth before.Â The first rig to be used for drilling a relief or cut-off well is on site and should begin drilling approximately Â½ a mile from the well head on Friday.Â The relief well will not be complete for several months.Â Responders are still figuring out new ways to use Remotely Operated Vehicles (ROVs) to try to trigger the blowout preventer (BOP), a series of valves that sits at the well head.Â Â These efforts will continue concurrent with the collection dome and relief well(s).Â Good weather today allowed for both skimming operations and aggressive aerial application of dispersants -- over 50,000 gallons of dispersants have been applied to the surface oil in the last two days.Â Patches of surface oil were captured with fire-retardant boom and ignited (***in situ*** burn).
Â
Current NOAA efforts are focused on: gathering more information about the spill, planning for open water and shoreline remediation, and readying for environmental assessment and response. Natural resource damage assessment (NRDA) activities are now underway.Â

- Winds are forecast to become strong (20+ kts) and blow from the southeast starting tomorrow and continuing through the weekend, which will continue to push surface oil towards shore.
- NOAA oil-spill trajectory analyses indicate that oil continues to move towards shore.

- 100,000 feet of oil-containment booms (or floating barriers) have been deployed as a precaution to protect sensitive areas in the Louisiana area.
- The effects of oil on sensitive habitats and shorelines in four states (LA, MS, AL, and FL) are being evaluated should oil from the incident make landfall in appreciable quantities.
- NOAAâ€™s Assessment and Restoration Division is evaluating concerns about potential injuries of oil and dispersants to fishes, human use of fisheries, marine mammals, turtles, and sensitive resources. ***[How about the potential impacts to oysters and the oyster industry?]***
- Baseline aerial surveys to assess marine life were conducted today with personnel from NOAAâ€™s National Marine Fisheries Service (NMFS), these will continue as needed.Â ***[How does one aerially assess Louisiana's oyster resources?Â Does NMFS have any oyster biologists onÂ staff?!]***

Subject: Fwd: Oil Spill Update
From: John Iliff
Date: Thu, 02 Sep 2010 12:42:08 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject: Oil Spill Update
Date: Thu, 29 Apr 2010 18:30:36 -0400
From: Eric Schwaab <Eric.Schwaab@noaa.gov>
To:_NMFS All Employees <NMFS.All.Employees@noaa.gov>

We are all watching with concern the unfolding oil spill incident occurring in the Gulf of Mexico. I wanted to let you know the activities to-date and the critical role that all NOAA line offices are playing, and the process we've established to ensure consistent and up-to-date communications.

As you know, on April 20th, there was an explosion that resulted in a massive fire on the Deepwater Horizon, a mobile offshore drilling unit in the Gulf of Mexico 50 miles offshore Louisiana. The rig burned for hours and then sank. Eleven out of 126 people remain unaccounted for. It was recently discovered that there are multiple leaks at a depth of 5,000 feet.

So far, attempts to use remotely operated vehicles to close valves and stop the leaks have been unsuccessful. Construction has begun on a collection dome that will be deployed to the sea floor to collect and funnel oil as it escapes, a method never tried at this depth before. The first rig to be used for drilling a relief or cut-off well has arrived and more are planned. A relief well would take several months to complete.

I want to acknowledge the tremendous amount of work being accomplished by our leadership and staff in the Southeast Region, Southeast Fisheries Science Center and within Headquarters. Dozens of your colleagues are working long hours, gathering and processing information, anticipating and planning for needed baseline information, on-going monitoring, and long-term response to both marine life and the coastal communities that will be impacted when this spill begins to come ashore.

All parts of NOAA are fully engaged providing scientific support to the U.S. Coast Guard and the Unified Command that is coordinating response operations. The overall coordination for the oil spill within NOAA is through the National Ocean Service and its Office of Response and Restoration. Support from National Marine Fisheries Service includes addressing impact and response issues related to marine mammals, sea turtles, shrimp and fisheries. National Weather Service is providing marine and aviation forecasts. The Office of Oceanic and Atmospheric Research is advising on airborne dispersion modeling and the National Data Buoy Center data is being used in oil trajectory forecasting. The National Environmental Satellite, Data, and Information Service is providing analysis of the oil spill using experimental methods with satellite imagery. Yesterday, NOAA's Assessment and Restoration Division (ARD) brought together more than 20 federal and state natural resource trustees to discuss natural resource assessments. Through ARD, Fisheries is helping to evaluate concerns about potential injuries of oil and dispersants to fishes, human use of fisheries, marine mammals, turtles and sensitive resources.

Yesterday, Roy Crabtree (Southeast Regional Administrator) and I were in New Orleans and met with the five Gulf States Fisheries Directors and the Gulf States Marine Fisheries Commission. We discussed

potential impacts and set up our communication protocol.

Communication Guidance
NOAA and each of its line offices have established oil spill response teams to support the larger Unified Command effort and its Joint Information Center (JIC), as well as the Incident Command Center (ICC). Brian Pawlak (Deputy, Office of Habitat Conservation) is our Oil Spill Coordinator. Two of the most critical roles of this process are to ensure efficient use of our staff resources and provide consistent and accurate information.

To accomplish this, all oil spill "taskers" to Fisheries must be directed through the NOAA ICC. The ICC exists to track taskers, prioritize and deconflict multiple requests for resources, etc. Deputy Under Secretary Mary Glackin has asked everyone to use the ICC for all oil spill taskings. The NMFS desk at the ICC can be reached by email at icc.nmfs@noaa.gov. The telephone number at the ICC is B6 Privacy [redacted]. Should you receive any oil spill taskers from anyone else, please forward them to icc.nmfs@noaa.gov for further guidance.

Understandably, we are receiving a great deal of inquiries and expressions of concern from our stakeholders in the Gulf and around the country about the anticipated harm to marine life and the economic impacts. To facilitate consistent and factual information, all press inquiries to Fisheries are to be routed to Connie Barclay (Connie.Barclay@nooa.gov) or Kim Amendola (Kim.Amendola@noaa.gov).

For all other public inquiries, please guide them to the informational web pages that are being updated daily with information on the spill and NOAA's ongoing response (links below), or direct them to Laurel Bryant for further guidance (Laurel.Bryant@noaa.gov)

http://response.restoration.noaa.gov/deepwaterhorizon
http://www.incidentnews.gov/incident/8220

I appreciate everyone's patience and team support during this critical time. Throughout the months ahead, many of you will be called upon to contribute and assist with this effort. Thanks.

Eric C. Schwaab

Subject: Fwd: Deep Horizon
From: John Iliff
Date: Thu, 02 Sep 2010 12:44:52 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject: Deep Horizon
Date: Thu, 22 Apr 2010 09:40:16 -0400
From: Tom Moore <Tom.Moore@noaa.gov>
To: John Iliff <John.Iliff@noaa.gov>

John,
Below is the internal evening report. Attached is the SITREP that was sent to NOAA HQ last night as well. I am guessing Dr. L's staff already has that.

The Deepwater Horizon is on fire and continues to burn, and the vessel (a very large semisubmersible) is reported listing roughly 15 degrees and is severely damaged to the point that the stability of the vessel had been questioned. Firefighting efforts have been scaled back because of a fear that the water applied is actual contributing to the list. The vessel remains on-location only because the riser that connects to the seafloor wellhead is acting as a mooring. The regional NOAA Scientific Support Coordinator has deployed on-scene to the USCG Command Post at Marine Safety Unit Morgan City. The RP's Command Post has been established at the Crisis Management Center at BP's Houston Office. The Regional Assistant Scientific Support Coordinator will deploy on-scene to that location in the morning. Of the 126 crew reported aboard the Deepwater Horizon, 115 have been accounted for (11 crew members remain missing). USCG SAR operations are continuing, and all hope that they will be found (our thoughts and prayers go out to the families). The effort to save lives is the primary response priority.

There is a wild well release. The volume or rate of the release is unknown, but thought to be significant. The USCG has requested a best guess estimate from the RP (and I would not be surprised if that value is in the 10-20K bbl/day range, the SSC's best guess estimated based only on past experiences). This was a new well that was undergoing a temporary plug and abandonment for future production. Most of the oil is burning at the platform generating 300 to 400 foot flames, intense heat, and black smoke. There was oil pollution reported in the water, and the extent of the slick was largely undelineated. Some reports suggested a slick 2 miles in length (better overflight reporting has been identified as a priority for tomorrow's environmental operations). NOAA has updated the trajectory analysis. Should there be a significant release of oil on water, the trajectory suggests that the Northern GOM coast would be at risk, but it would take more than three days for oil to threaten the shorelines and the weather forecast and oceanographic currents could change. The amount of diesel on the vessel was updated to only 700,000 gallons earlier in the day, and what fraction of this that may have burned is also unknown. The RP has a wide range of on-water pollution response vessel in route or already on-scene including MSRC Response Vessels and CGA HOSS Barge skimming system. Dispersant assets have also been restaged.

The RP is working to attempt a shut in of the well at the seafloor using a ROV to activate the Blowout Prevention System. Two attempts earlier in the even have failed. It is believed that crew members had activated this system before evacuation, but there was no affect either. A third attempt is planned for

later in the night. Controlling the source of the release is the most important operation outside of the SAR effort. Should the semisubmersible sink or detach from the riser, it is likely that the fire mitigation would be lost. A major oil spill would be the expected result. Failure to shut in the well using the control system at the seafloor would potentially create a continued release of crude oil until a relief well could be drill (a time period characterized as several weeks). There is a strengthening of winds and sea state predicted by Friday evening. Such weather would put even greater stress of both the vessel and the riser. This third attempt to shut in the well tonight is critical with respect to preventing a major oil spill event.

NOAA has preidentified additional response personnel to support the USCG. If the well is not secured tonight, it is likely that NOAA's on-scene presence will ramp up to be in a better response posture should (or more likely when) the semisubmersible disconnects from the riser or seafloor connection resulting in a, most likely, major oil pollution release. It has been a long day. The situation status will be updated after the morning brief.

Tom Moore
NOAA Restoration Center
263 13th Ave South
St. Petersburg, Florida 33701

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Subject: Fwd: Weekly Update
From: John Iliff
Date: Thu, 02 Sep 2010 12:44:04 -0400
To: Jeff Shenot

FOIA #2010-00377

-------- Original Message --------
Subject: Weekly Update
Date: Fri, 14 May 2010 18:39:50 -0400
From: Eric Schwaab <Eric.Schwaab@noaa.gov>
To:_NMFS All Hands <NMFS.ALL@noaa.gov>, Brook H Davis <Brook.H.Davis@noaa.gov>, Jane Chalmers <Jane.Chalmers@noaa.gov>, Madelyn Appelbaum <Madelyn.Appelbaum@noaa.gov>, dickschaef <dickschaef@aol.com>, mhk <mhk@mk61.com>, Mary Glackin <Mary.Glackin@noaa.gov>, Mary Beth Ward <Mary.Beth.Ward@noaa.gov>, Cheryl Oliver <Cheryl.Oliver@noaa.gov>, Scott Smullen <Scott.Smullen@noaa.gov>, Janet.E.Ward@noaa.gov, Connie Barclay <Connie.Barclay@noaa.gov>, Monica Allen <Monica.Allen@noaa.gov>, jboreman@nc.rr.com, Jane Lubchenco <Jane.Lubchenco@noaa.gov>, Amrit Mehra <Amrit.Mehra@noaa.gov>, Monica Medina <Monica.Medina@noaa.gov>, Justin kenney <Justin.kenney@noaa.gov>, Margaret Spring <Margaret.Spring@noaa.gov>, Amy Holman <Amy.Holman@noaa.gov>, Lynn Maximuk <Lynn.Maximuk@noaa.gov>, Bethany A Hale <Bethany.A.Hale@noaa.gov>, Jennifer Day <Jennifer.Day@noaa.gov>, Jeff LaDouce <Jeff.Ladouce@noaa.gov>, Jeff Payne <Jeff.Payne@noaa.gov>, Geno Olmi <Geno.Olmi@noaa.gov>, Timi Vann <Timi.Vann@noaa.gov>, Andrew Winer <Andrew.Winer@noaa.gov>, Tanya Dobrzynski <Tanya.Dobrzynski@noaa.gov>, Stephanie Hunt <Stephanie.Hunt@Noaa.gov>, Jessica Kondel <Jessica.Kondel@noaa.gov>, John Gray <John.Gray@noaa.gov>, Sally Yozell <Sally.Yozell@noaa.gov>, Laura Hamilton <Laura.Hamilton@noaa.gov>, Laura Furgione <laura.furgione@noaa.gov>, Lisa Iwahara <Lisa.Iwahara@noaa.gov>, Michelle Schmidt <Michelle.Schmidt@noaa.gov>, Vicki Schwantes <Vicki.Schwantes@noaa.gov>, Kate Balet <Kate.Balet@noaa.gov>, Larry Robinson1 <Larry.Robinson1@noaa.gov>

MEMORANDUM FOR ALL NOAA FISHERIES EMPLOYEES

FROM: Eric C. Schwaab
Assistant Administrator for Fisheries

SUBJECT: Weekly Update for Week Ending May 15, 2010

Personnel Update
As I mentioned in my email to all employees on May 13th, Will Stelle has been appointed as the Northwest Regional Administrator and will begin on June 1st. A special thanks to Barry Thom (Deputy RA) who has been acting as the Regional Administrator and to Carrie Selberg (on detail from F) who has been acting as the Deputy Regional Administrator for leading the Northwest Region during this transition.

Oil Spill Update
The intense level of response by NOAA to the BP oil spill continues. We currently have 33 employees deployed in response to the spill and many more working from their offices. I want to thank everyone

for your continued dedication from all levels for the work you are doing. This week, we have modified the commercial and recreational fishing closure in the oil-affected portions of the Gulf of Mexico. This is the 4th modification since our initial closure on May 2nd. As of 6:00pm eastern today, current revisions to the closure took effect and encompass an area that represents about 8% of Federal waters in the Gulf. We continue to monitor the trajectories on a daily basis and will make modifications as necessary.

Earlier this week, Dr. Nancy Thompson (Director, Northeast Fisheries Science Center) was detailed to our Pascagoula Lab to lead our focused effort to rapidly assess, test and report our findings about risks posed to fish in the Gulf of Mexico by contaminants from the BP oil spill and clean-up activities. This will allow Dr. Bonnie Ponwith (Director, Southeast Fisheries Science Center) to focus on both oil spill duties, as well as high priority regional issues and working with the Gulf, Caribbean and South Atlantic Fishery Management Councils. Nancy's experience during the Hurricanes Katrina and Rita experience made her a logical choice. While Nancy is at the Lab, Frank Almeida will serve as the Acting Center Director.

Weekly Highlights

Monday morning, I met with John Connelly (President, National Fisheries Institute). NFI has been an important partner over the years working with them on issues regarding inspection, exports, imports, food standards, seafood and health, and different regulatory issues. Most recently, we have worked closely with them on the EU's new inspection requirements for IUU certification.

Monday evening, I appeared on the Maryland Public TV call-in show with host Jeff Salkin to take questions from him and the public about our response to the oil spill. I was asked by a caller about dispersants and explained that we were working with the EPA to provide scientific and technical advice. I described how NOAA Fisheries is preparing for and trying to mitigate the effects of the BP oil spill on fisheries, marine mammals, turtles and aquatic habitats. I explained to the viewers how we use trajectory forecasts provided by other NOAA line offices on ocean currents, weather and wind to design fishing closures needed to protect public health, as well as public confidence in the Gulf of Mexico fisheries that remain open and safe. Thanks to Monica Allen (NOAA Fisheries Communications), who accompanied me to the studio.

Tuesday, Emily Menashes (Acting Director, Sustainable Fisheries), Dr. Rebecca Lent (Director, International Affairs) and I met with Pam Baker (Environmental Defense Fund), Robert Heuter (Director, Mote Marine Lab-Sarasota, FL), Pete Boehm and Scott Vaeth (shark fishermen from the FL Keys) to discuss catch shares and shark management issues.

Wednesday morning, Secretary Locke, Dr. Lubchenco and I met with members of the New England delegation on Capitol Hill regarding New England groundfish. A request by 23 bipartisan members of the New England delegation asked Secretary Locke to exercise his authority under the Magnuson-Stevens Act to implement emergency rulemaking to increase the 2010 annual catch limits for 19 fish stocks.

Wednesday afternoon, John Oliver and I had a conference call with Alan Risenhoover (Acting Director, Law Enforcement) and the State Enforcement Directors meeting in Miami, Florida. It gave me an opportunity to reach out to our partners in the States and introduce myself. Afterwards, John and I met with Jim Lecky (Director, Protected Resources), his staff and the Protected Resources Assistant Regional Administrators, who were meeting in Headquarters this week. I appreciated the opportunity to meet with them for a dialogue and Q&A session.

The Atlantic Highly Migratory Species Advisory Panel was in Silver Spring this week. Thursday

morning, I met with the panel members to provide a few remarks on bluefin tuna, sharks, swordfish and billfish. We value the AP's advice as we work together on HMS management.

Friday afternoon, Monica Medina (Senior Advisor to the Under Secretary), Lois Schiffer (NOAA General Counsel) and I attended a joint briefing for Federal agencies at the Department of the Interior on the Bay Delta Conservation Plan (California) including a history of the California water supply.

Next week, I will be in Alaska to visit the regional office and to co-chair the annual Council Coordinating Committee Meeting.

Thanks again everyone for your dedication and hard work at NOAA Fisheries. Have a safe, enjoyable weekend.

Attachments
F Video Notes
Upcoming Events